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JUN 18 1915
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FARM and FIRESIDE

The National Farm Paper - Every Other Week

ESTABLISHED 1877

Saturday, June 19, 1915 5 cents a copy

Down in the South Pasture

Visit the Exposition with Farm and Fireside

YOU are invited to take a picture trip to the Panama-Pacific Exposition in the July and August issues of *Farm and Fireside*. In many ways a picture trip has advantages over a real trip because you will not need to leave the comforts of your own home. But all the big scenic effects of this wonderful Exposition will be reproduced for you in coming issues of *Farm and Fireside*.

The pictures will bring out in complete detail the beautiful buildings, wonderful landscapes, and all the other charming scenic effects which place the Panama-Pacific Exposition in a class by itself.

HERE are a few of the remarkable features of the Exposition that you will find pictured in *Farm and Fireside*:

The Tower of Jewels, located at the south end of the Court of Sun and Stars. It is 430 feet high, and a wonderful sight to behold, both by day and night.

Festival Hall. This building is 380 feet long, 376 feet wide, and is an architectural triumph of the first magnitude.

Palace of Machinery. This is the largest building at the Exposition, 367 feet wide and 968 feet long.

Horticultural Building. This notable structure is composed almost entirely of glass. It is 630 feet long, 295 feet wide, and its glittering dome is one of the most striking features of the Exposition.

Court of Palms. This suggests the mystical splendor of the Orient, and is an architectural and decorative triumph worthy of the Exposition.

The Horseless Plow

NOT very many years ago, people looked on the horseless carriage as a joke. This summer a great many thousand farmers are purchasing automobiles which are recognized to be not only a source of pleasure but an actual economy on the farm. As a time and labor saver the horseless plow or farm tractor will be worthy of a place right beside the automobile. A large number of responsible manufacturers are now engaged in putting farm tractors on the market, and it is only a question of time until the farm tractor will be in use on all of our best farms. You will want to read about the horseless plow in a July issue of *Farm and Fireside*.

Free Land at Your Front Door

LOTS of people are complaining because most of the government free land has been taken up. Most of the farmers, and especially those of the Mississippi River Valley, have no cause to complain about free lands. Annually the farmers of the Mississippi Valley give away about 337,000 acres of land. Moreover, this soil which is washed away is usually the most productive soil on the farm. Prof. A. F. Gustafson treats of this free-land question in a July issue of *Farm and Fireside*, and gives sound and practical advice on the way to stop soil-washing.

Buy Your Ticket in Advance

FARM AND FIRESIDE is really like a great special train which carries you about the country pointing out the profitable, the useful, and the practical things which the farm people are doing in all sections of America. It would cost you a great deal of money and a lot of time if you were to travel around yourself. *Farm and Fireside* employs experts to travel for you and tell in *Farm and Fireside* about the new and sensible things they see, all of which is presented to you every-other-Saturday in clear, simple, readable language. You buy your ticket before you get on the train, or pay in advance for your subscription.

Special Summer Rates

FOR a short time we shall allow Special Summer Rates on Farm and Fireside. $1.00 will extend your subscription to Farm and Fireside for four years—104 numbers. 50 cents will extend your subscription two years—52 numbers; or 35 cents, our Special Club-raiser Rate, will extend your subscription one year—26 numbers. Mail your orders to

FARM AND FIRESIDE
Springfield, Ohio

The Editor's Letter

At Coolfont Farm, June 7, 1915

THERE'S somebody somewhere who wants that thing you have to sell—you may be sure of that—if you could only find him.

The trouble is to find him, and to get the article to him. The first requirement is knowledge. The second is transportation.

Here's a letter from a farmer's wife in Randolph County, Illinois, which shows how ruinous the lack of these two things sometimes is. And she is only one of many hundreds of thousands scattered from the Lakes to the Gulf, and from ocean to ocean.

This section of the State has suffered badly from drought for two years now, last year bringing us almost a complete failure of crops. Everyone bought lots of feed, and still much of the stock was underfed.

We talked of writing you last year, when buying feed, to learn if you could put us in touch with farmers who have feed to sell, so that we could buy direct of them instead of through middlemen.

A good many farmers bought a carload at a time. Some carloads were divided among several farmers. But always it went through the hands of one or two middlemen. My husband bought one whole carload and several parts of cars.

The farmers about here have also had to buy all their seed oats and seed corn.

Last fall I should have bought a bushel of onions and a supply of string beans to can if I could have got them fresh from a farm within reasonable shipping distance.

There is no problem to which I personally have given more consideration than this. I don't see, however, how it can be solved by or through any farm paper, local or national, or through any other publication.

It is a matter of trading. In the case of our Illinois friends it is a case of not knowing about things which existed close at home, perhaps, except as to the grain.

In Cass County, Illinois, two or three years ago, several farmers lost their winter wheat. They got a college professor from the Wisconsin Agricultural College to come down and talk to them about a crop to take the place of the wheat. They got him because he had a national reputation and had done splendid work on barley. He told them to sow barley in place of the wheat, and was able to get from a lot of Wisconsin farmers all the pedigreed seed barley they needed.

This was a matter of getting information. Getting past the middleman is a different matter.

FARM AND FIRESIDE has frequently pointed out the fact that it is almost impossible for one farmer to buy grain of another, if they live any distance apart, and get it as cheap as it can be had of the middlemen in the great grain markets.

A few months ago I had a talk with a farmer in Kansas which illustrates this.

Railway Rates Hinder Farmer's Work

His corn crop was a failure on account of the drought. He had a friend living near Des Moines, Iowa, who had several thousand bushels of corn for sale. The Kansas man had all the information he wanted. He knew just where the corn was. He knew it was just the corn he wanted. But when it came to shipping it he discovered that, owing to the way the railway rates are arranged, he could get it cheaper from the Kansas City dealers after it had been shipped from Iowa to Kansas City, unloaded, reloaded, and reshipped, and after it had paid one or two commissions and profits.

This is wrong. Railway rates and regulations should not be designed for the purpose of forcing grain to bear such charges. A farmer anywhere should be given rates just as favorable to any point anywhere as can be obtained by the elevators and the terminal markets. This abuse can never be cured until the farmers are so organized as to make their wants known effectively.

As to the onions and beans, that is another sort of matter. Our subscribers suffered from ignorance. It is an ignorance which they individually cannot remedy. In the absence of some system for getting knowledge as to such things as onions, beans, calves, pigs, chickens, sheep, seeds, and the like, people will suffer from ignorance as long as nothing is done to cure the ignorance. A friend of mine was in the Klondike when the Spanish War broke out. He was ignorant of all this momentous conflict, simply because he was cut off from the world. These Illinois people are intelligent people, as are most who are so situated, but they are cut off from the world of people who have feed, stock, seeds, onions, and string beans for sale.

I think the Illinois Agricultural College ought to be able to help out, if they haven't already done so. Professor Doane of the Missouri College and some helpers have an organization of farmers which is solving this very problem. In this issue, on page 4, an account of this organization is given. Our Illinois friends, if they had lived in Missouri and had belonged to that association, would have paid a dollar for a year's membership, and by writing to the secretary could have found out where the beans, the onions, and the feed too, were for sale. As a matter of fact, these Missouri people, through their organization, did buy carloads of grain at a saving.

Here the College May Help the Producer

There is a similar organization in Kentucky, and there may be elsewhere. I should like to hear from people who belong to bodies of this sort.

Personally, I think the county agents might do a great deal to help out. In fact, a great many do. I wonder if our Illinois friends have made the acquaintance of the county agent, if there is one in Randolph County, and have given him any chance to find things to buy and sell. There may have been plenty of both onions and beans right in the county, if they had known about them; and the county agent may have known all about the supply but nothing of the demand.

I think there are few county agents who would not be willing to take the management of an organization that would be a real exchange of market news. If the work grew too onerous, give him a clerk—the expense would be light for a few hundred farmers, and would be profitable. These local organizations could keep in touch with each other through correspondence. And after any large proportion of the counties became organized, the federated associations could get the railway rates to which they are entitled, even against the opposition of the great grain magnates.

Our Illinois subscriber raises a very important question. To solve it we must have local organizations, state organizations, a national organization, and a little legislation.

Herbert Quick

Always in Good Humor

ROUGH ON TOMMY

The mails from home had just been received by a certain regiment. Not only were there letters, but many parcels from relatives and friends at home for lucky soldiers. One of the Tommies received a large box addressed to himself, and with a triumphant yell he rushed off to his company's lines and gathered them around him to share in the eagerly anticipated contents of his box.

"Smokes, lads!" he cried as he undid the wrappings. "From the old man; I know it. An' there's sure to be a bottle or two of Scotch."

He opened the box, gave one look at the contents, and collapsed in a heap.

"What is it?" cried his comrades, pressing around.

"It's from old Auntie Mary," groaned the disappointed warrior. "Bandages an' ointment an' embrocation an' splints, an' a book on 'Ow to Be Your Own Surgin'!"—Chicago Herald.

THE DIFFERENCE

SHE—Women are more resourceful than men.

HE—I guess that's right. A man has to get his clothes made to fit his shape, but a woman can get her shape made to fit her clothes.—N. Y. Times.

WHEN you are asked to drink, my son, and have half a mind to accept the invitation, remember that if you had a whole mind you wouldn't.—Woman's Journal.

A GRAND EXPANSE

MR. WAYUPP—This is a great big land of ours.

MR. BLEASE—That's right, and a fellow doesn't realize it till he travels. Why, you can actually go to places in this country where you don't owe anybody.—Puck.

"AIN'T IT THE TRUTH?"

TEACHER—The sphinx has eyes, but it cannot—

"See!" cried the children.

Has ears, but it cannot—"

"Hear!" they responded.

"Has a mouth, but cannot—"

"Eat!" said the chorus.

"Has a nose, but it cannot—"

"Wipe it!" thundered the class.—St. Paul Press.

THE WISE FOOL

"What you don't know won't hurt you," quoted the Sage.

"Unless you didn't know that it was loaded," corrected the Fool.—Cincinnati Enquirer.

RIVALS

A group of farmers were sitting round the fire in a country inn and telling how the potato pests had got into their crops.

"The pests ate all my whole crop in two weeks," said one.

"They ate my crop in two days and then sat around on the trees and waited for me to plant more!" said another.

"Well," said a commercial traveler for a seed merchant, "that may be, but I'll tell you what I saw in our own warehouse once. I saw four or five beetles examining the books about a week before planting time to see who had bought seed!"—Peoria Star.

DISTRESSING

DEAR SWEET THING—Aren't you feeling well?

STEADY—No; I ate German noodle soup and French fried potatoes for supper, and they won't arbitrate.—Lehigh Burr.

HADN'T NOTICED

FIRST GURGLE—Did you notice that good-looking fellow who sat right back of us at the Orpheum?

SECOND GURGLE—Oh, the handsome chap with the red necktie and tan suit, who wore his hair pompadour? No. Why?—Nebraska Awgwan.

FARM and FIRESIDE

—PUBLISHED BY—
THE CROWELL PUBLISHING COMPANY, SPRINGFIELD, OHIO
Branch Offices—381 FOURTH AVENUE, NEW YORK CITY; TRIBUNE BUILDING, CHICAGO
ENTERED AT THE POST-OFFICE AT SPRINGFIELD, OHIO, AS SECOND-CLASS MAIL MATTER
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Vol. XXXVIII. No. 19 SATURDAY, JUNE 19, 1915 *Published Bi-Weekly*

Reducing Harvest Labors

New Crop-Gathering Machines Do Away With Drudgery

By D. S. BURCH

If the corn is not too heavy, one of these elevator corn binders will do satisfactory work. This saves the back-breaking job of pitching corn bundles

Some of the new potato machines not only dig the potatoes but place them in crates. To insure best results the soil should be loose and free from stones

FEW men or women are living to-day who can remember the first reapers used twenty years before the Civil War, but the Marsh harvester, invented in 1855, is not quite forgotten. The Marsh harvester, you will remember, delivered the bunched grain, untied, to two men who stood on the machine and bound the grain with its own straw.

After the Marsh harvester came the wire binder with its many faults, then the twine binder with its few faults. And now perfection is only just ahead—at least so think the inventors of to-day.

I've talked with perhaps fifty inventors the last few months. They are bright, alert men, not dreamy geniuses or fanatics as some folks paint them.

Invention is getting to be a matter of team work nowadays. Plenty of chance for individual brilliancy still remains, but associates must help to improve, test, improve again, manufacture, and market the devices.

Styles Begin in the Central West

You hear of the inventor's name less often, but you can rest assured that he won't starve or be in poverty before he gets his patent, as many are said to have done before it became the custom to have experimental departments and put inventors on salaries. What they lose in fame they make up in comfort; and, besides, their families are happier, I should judge.

Unlike styles in dress, however, which come chiefly from a few large cities, farm machinery styles originate anywhere, but largely in the Central West, where most of the factories are located.

No one concern has yet secured a "corner" on inventors, and that is perhaps why no single make of implements has all the good points. But all the implements are getting better. They have to get better or be crowded off the market.

This year nearly all the designers I have visited are talking about "more flexible" machinery. Light draft and effectiveness are taken for granted. "Of course a piece of machinery has to be labor-saving for man and team," they say; "but it must be more than that: it must be flexible."

A flexible machine will work in all kinds of places and do a good job in spite of any difficulties within reason. It will adapt itself to uneven ground, be light yet have plenty of reserve strength, and adjust itself to changing conditions without a lot of attention and constant tinkering. That's what they mean by being flexible. To be flexible is to be able to bend. A flexible machine is one which can be bent, so to speak, to meet all sorts of conditions.

For instance, one new binder has an improvement which throws the packers out of gear just before the knot is tied.. Everyone knows that in heavy grain there is a stiffer draft when the needle goes forward to tie the bundle. The horses feel the extra strain even though the operator may not be conscious of it.

But with the new device the packers stop for a moment and the power needed to run the needle is borrowed from the packers and given back again as soon as the bundle has been tied. This helps the binder to run smoothly. The inventor claims it allows the machine to work on softer ground than usual.

Sometimes we meet difficulties which are not "within reason." When the ground is overflowed or excessively wet, for instance, no ordinary binder will work. Such a thing doesn't often happen, but when it does it means disaster and doom to the grain. Here's a little trick to avert this ruin. J. H. Shepperd and Nicholaus Grest of the North Dakota Station worked it out for use in the Red River Valley.

That rich valley is nearly as big as Massachusetts and as level as Lake Michigan, and sometimes becomes so soft from continuous rains that you can't go onto it at all with a binder. There are many other places where the same thing sometimes happens; and what sight is more pitiful than a great field of ripe grain shattering out into the mud?

After several trials, these men hit on this plan which worked. They removed the bull wheel and tongue truck from an ordinary binder, and mounted what was left of the binder on two 6x6-inch timbers. Then they took the running gears of an ordinary farm wagon and hung the 6x6-inch timbers from the axles so that it looked like a low wagon carrying a binder.

They mounted a gasoline engine behind the binder with a chain connection to drive the pitman shaft. Even then the grain wheel sank in the ground so that the platform dragged in the mud, for it was real mud like that which followed Noah's celebrated deluge. To remedy this they rigged up a 4x4-inch cantilever support, and with a chain hung from the end of it they took nearly all the weight off the grain wheel.

"Four horses and this ingenious outfit cut 150 acres of grain, much of it in standing water and the entire field so wet that the ordinary binder would clog immediately," said Mr. Shepperd.

Binders Have New Improvements

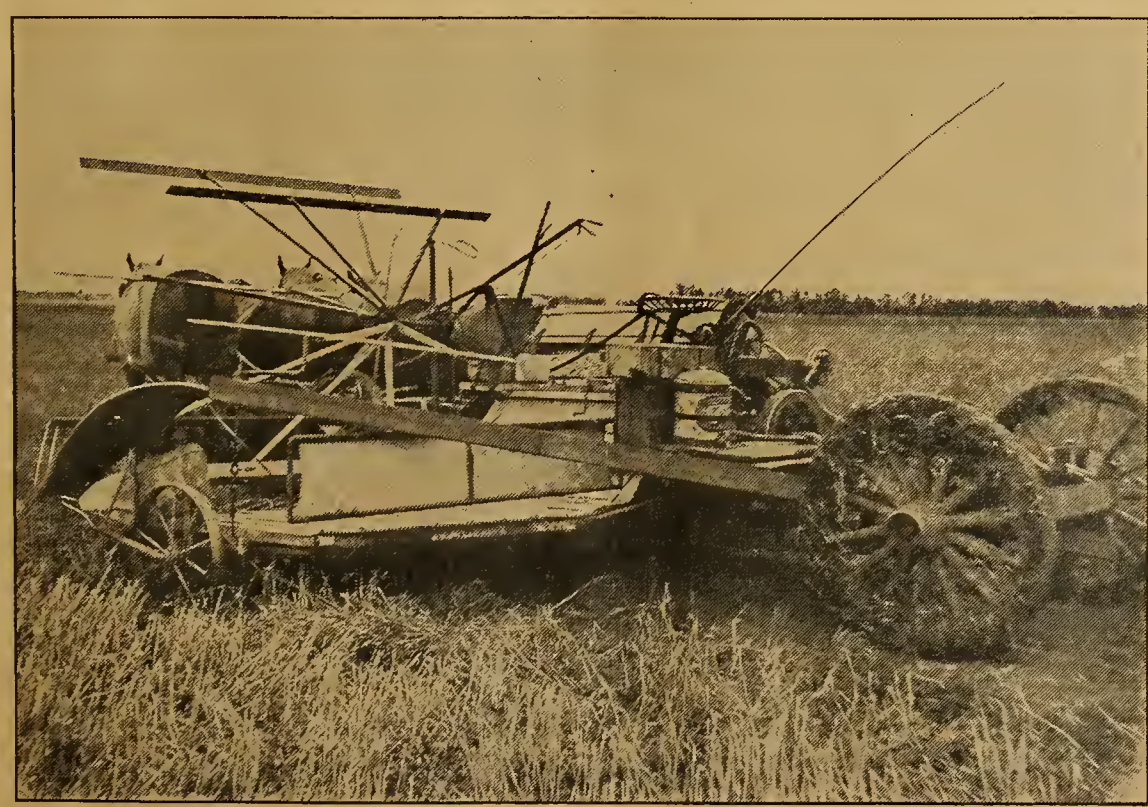
The success of this invention proves that not all the inventive genius is to be found in the employ of factories.

An interesting and recent binder improvement is an outside reel support made of light metal. When the man who showed it to me jumped up and hung on the outside end of the reel, I expected to see the whole thing collapse. It scarcely sagged. The advantage of such a support is that it steadies the reel so that when set low for cutting short or tangled grain, it will work well without striking the platform.

Sometimes the seed bed is poorly prepared and is full of dips and bumps. One man said that he cut oats in a rough field of that sort and had just one slat on his reel when he got through. It was a good binder too, except that it lacked an outside reel support. The larger sizes, of course, need it most.

Another new tool is the header binder, which is really just a push binder made so that stubble a foot long or so can be left. This implement is for the man who doesn't care about getting all the straw, but who wants to get his grain cut and shocked quickly. It comes in both a ten- and twelve-foot cut, and requires from six to eight horses.

In headers two concerns have kept strictly up-to-date by providing a kafir-corn attachment which does away with the cost of a special kafir-corn cutter, and graduates a man from the laborious corn-knife class. The attachment can be set to cut at a height from 33 to 54 inches. A machine which will cut at that height will surely find unexpected uses. One of these manufacturers has a kafir-cutting attachment for the corn binder also. In fact, when kafir, milo, and similar crops are planted in rows, a corn binder



One hundred and fifty acres of grain, much of it in standing water and the rest on ground so muddy no ordinary binder could work, was cut with this binder

properly equipped with the attachment is an excellent implement. And don't forget that kafir and the other grain sorghums are crops of growing importance.

One new corn binder has a carrier that swings the bundle around and backwards far enough from the machine to be entirely out of the way of the team on the next round. It works on a roller bearing, and a slight push of the foot on a pedal will swing it about six feet to the side. This keeps the third horse from stepping on the bundle and leaves a nice clear path for the team. Another improvement is an elevator which loads the corn bundles directly onto a wagon going along side of the binder. This elevator adds about $32 to the cost of the binder, but it saves the labor of band loading. The bundles are delivered to the man on the wagon, all pointed in the same direction—that is, head first—and the elevator can be raised as the load gets higher. Judging from field reports this machine has not yet been fully perfected. One user whose ensilage ran nearly 20 tons to the acre said: "The one we had last year didn't work well in our heavy crop. But the idea is all right, and when the machine is made stronger and given more power it will be a fine thing for the corn grower."

Machines Do the Corn-Husking

Still another interesting corn-harvesting machine is the corn picker. It snaps the ears from standing corn, husks them, and elevates them into a wagon. The machine is claimed to do a more thorough job than hand picking because it doesn't overlook any ears. The stalks are left standing in the field and, strangely, much of the husk is left on the stalk, so gently does the picker work. The machine looks something like a corn binder, and is driven like one; but in principle it more closely resembles a corn husker, if you can imagine one with the husking rolls set sloping backward.

Of course there is no knife to cut the stalk, because the stalk is left in the field. The stalk and leaves pass between two specially designed oblique rollers, but the ears cannot get through. They are snapped off, the husks and silk are removed mechanically, and then they go to the elevator and into the wagon that accompanies the picking machine. Provision is also made for saving any corn shelled out.

This implement is heavier than a corn binder, costs over twice as much, and requires about six horses to pull it. While it does its work well, it does not do the kind of work an average farm requires. Such a machine is useful chiefly to the large corn grower of Illinois, where corn is often grown for the grain alone, and for all the corn-belt States west of the Mississippi.

But on most farms cornstalks are too valuable to let dry and harden in the fields. As fodder they have a feeding value considerably greater than the cost of cutting, while for silage—well, silage has too many friends to require any testimony here in its behalf.

And speaking of silage, recent efforts to improve ensilage cutters have been exceptionally fruitful. The new cutters are more powerful, lighter, and run at lower speed than the older machines. This seemingly impossible accomplishment is due to special designing, to the use of ball-bearings, and notably to the adoption of six fans instead of four on the blower.

"We have considerable difficulty," says one manufacturer, "in making people believe that they no longer need a great big steam engine to fill their silos."

The six-fan blower provides for a lower operating speed, and reduces the power needed by about one fourth. A man with a six-horsepower gas engine can now put up 45 tons of silage a day in a 40-foot silo. A cutter to do that costs about $135. Some say that the eight- and ten-horsepower machines are better in most cases than the smallest size, but that is something for the purchaser to decide. The principal thing is to get a properly balanced outfit so the cutter will have enough power and run at the right speed.

The reduction in speed has several noteworthy advantages. Most old-style silage cutters had to be run at between 900 and 1,000 revolutions a minute. One manufacturer frankly said that eleven of his old cutters exploded—blew up—in one season. "That always meant delay," he added, "and while no one was hurt, still there was danger. In those days the blower apparatus was made of cast iron.

"But now we're making them of steel," he continued, "and they do as much work in 750 revolutions as the old ones did in 900 to 1,200 revolutions."

The manufacturer of one ensilage cutter guarantees it to fill any silo, no matter how high, providing the speed of the cutting wheel does not fall below 600 revolutions a minute.

Ensilage Cutters Wear Longer

This slower speed is so much easier on the machine that it is claimed a cutter will last longer—probably twice as long. The whole situation is a lot better than it was when ensilage-cutting required almost as big an outfit as threshing, and when you had to cut early and late just because the cutter happened to be in your neighborhood. Then it was a question of "now or never." But now you can have your own outfit and be independent. You can cut your ensilage at just the right time, and even if you have a small cutter, and it takes longer, you'll probably be ahead in the end. You can get a small ensilage cutter now that will fill a 30-foot silo under a power of only three horsepower.

From what has already been said you can see that gas engines have had much to do with new designs in machinery. Digging potatoes, for instance, is a job on which the gasoline now helps. It not only digs potatoes, but it puts them in crates, so that harvesting potatoes is, on some farms, becoming a good deal of a recreation. You can see from the picture that the only thing a man has to do is to drive his team. The potatoes come out into the crates on the side while the vines go out the back of the digger as usual. Horses draw the implement, but the gas engine, which is mounted on the digger, supplies the power for the working parts.

The stones? You've guessed it. If the field is stony those about as big as potatoes will go in with the "spuds," and will have to be picked out. That objection hasn't been overcome yet, but in sandy ground the machine does a finished job. It is costly, but it saves a whole lot of backache and liniment.

Inventions Undergo Many Tests

You may wonder just how fully these new implements are tested and how much actual farm use they receive before they appear on the market.

"Of course it's human nature," one inventor said, "for a man with a new idea to want to see it put into effect at once. Right there is one of the advantages of large experimental departments over the one-man shop.

"In a big concern you have to convince a lot of experts before even one machine is made and tried. If the new principle is radically different from anything made before, the first machine is seldom satisfactory. But if it shows promise we work on it further. Then if it stands all our own tests we make a modest number, usually somewhere between five and ten. These we send to farmers we know in different parts of the country. Usually our branch managers help in seeing that these trial machines get into the right hands.

"Sometimes the machines are leased and sometimes sold, but always with the full understanding that they are trial machines. We can't possibly make any money on those machines because when only a few are made the cost of the manufacture runs many times over what they could possibly be sold for.

"Then after actual trial from a few months to a year, or more, we get reports on those machines. If the reports are unfavorable we call the machines back and try to profit by the experience, which sometimes costs from five to ten thousand dollars. You see, we'd have no way of furnishing repairs if one or two wanted to keep theirs. But if the new machines work well we feel that we have sufficient foundation for going ahead and making more.

"Trials in the field are more valuable than any other tests, we find, for even though a new implement is mathematically correct, it doesn't always give good results in a field test.

"Does it satisfy the farmer? That is the question with us always. The farmer is the highest court in the machinery business."

Finding a Market

An Exchange Saves Missouri Farmers Much Money

THE first live wire in this story was D. H. Doane of the Missouri College of Agriculture, but he could have done nothing if there had not been a lot of live, progressive farmers in Missouri.

Did you ever have something to sell and, after wondering where you could find a buyer, discovered, too late, that a man in the next county was looking for that very thing and didn't know where to get it? or vice versa?

Professor Doane and the Missouri farmers were sick of this condition. They knew that they were failing to make the profits they would have made if they had had some way of getting the news regarding customers. It was a matter of too much stand-offishness on the part of the farmers, and too little come-together-ishness.

So they formed the Missouri Farmers' Exchange. The object was to make it easier for the farmers to make good trades with each other and with dealers.

This was about two years ago. It is a success, though for a while it went pretty slow, and the croakers freely predicted failure. Stick-to-itiveness on the part of the real men in the movement, coupled with a scheme which was sensible at bottom, won; and now the readers of this who happen to belong to the Missouri Farmers' Exchange have the chance to buy from a list of more than a million dollars of offerings filed with the secretary of the exchange. There is registered live stock, feed, grains, all kinds of farm seeds, farms, farm leases, farm labor, farm machinery, and poultry. Everything is done to help the members.

The motto is, "A Square Deal." Every member of the Missouri Farmers' Exchange pays a dollar a year for the chance to trade with the other members on a "square deal" basis. Really this exchange is a scheme for giving the members a big dollar's worth of mutual help.

Up to date every man, on the average, in the association has received $3.33 in profit for every dollar spent.

How does it work? Well, suppose you live in Missouri and belong to the exchange. You live in a county which raised a bumper crop of corn. Right along the same railway line is a region which is long on oats and short on corn. The Missouri Farmers' Exchange will put you into communication with some farmer in the other place who wishes to buy what you have to sell, and desires to sell what you want to buy.

Last year members of the exchange got car lots of corn and oats from Iowa at better prices than they could have got in their near-by markets. Carloads, mind you—for this is no penny business or the trading of jack-knives for cap pistols. It runs into big figures, and it is only in its infancy. Some members last year saved as much as $30 on a single car of grain, besides the labor of writing letters, and heavy railway and elevator charges for transportation and reloading.

The Savings Amount to $1,332

The exchange has bought and sold a total of over $25,000 worth of various things which the members could not have obtained at home, and on $15,232 of business saved the members $1,332, or about eight per cent. This is the difference between profit and loss.

These progressive Missourians sow many cowpeas and soy beans. Many of them searched in vain for seed at fair prices, until the exchange located a supply in the East and South and arranged to have it shipped in car lots. It saved a good deal of money. It was just as easy for the exchange to find this supply for everybody as for one to find it for himself alone—and many of us lose money often in a pinch rather than write a letter and take it to the post-office.

Professor Doane was the first "live wire" in the organization. The second was a farmer, Mr. F. H. Russell, its president. He believed in it, and spent a great deal of time working without pay for the public good. Whenever anything worth while of this sort is done, some man will be found who takes pleasure in serving his fellow man.

The third man is a student in the Missouri College of Agriculture, Mr. J. Robert Hall; but the work of the exchange gives him so much to do that he is about the busiest student in that institution. Mr. Hall is secretary and treasurer of the Missouri Farmers' Exchange, and his address is Columbia, Missouri.

The reader will at once note that a dollar a year is a very small expense for such a co-operative exchange. It would not begin to pay the selling expenses of a truck gardeners' or a fruit growers' exchange, but so far it has been enough for the purposes of these Missouri farmers.

The secret lies in the fact that the secretary handles no money on the trades made by the members. He makes no sales. He lets the members do this. He finds where there are two men who are customers for each other, and merely "sicks" them on each other. They do the dickering. Whether they trade or not is up to them.

The membership fees pay the secretary, and neither he nor anyone else collects a cent of commission or other percentage on the business done. The dollar a year takes the place of all these dues and charges. If a member does any violation to the principle of "A Square Deal" he is discharged from the exchange—dishonorably discharged—and his membership fee retained. There is very little complaint of trickery. Men who are live enough to co-operate in this way are usually honest. And, anyhow, it doesn't take a very smart man to understand that business done by mail must be done honestly.

Wherever possible, the seller sends a sample and sells by that. Seeds in such trades may be tested at the government seed-testing laboratory at the college, and sold under a guaranty. When the inquiry is sent in, the secretary is often able to mail the inquirer the name of the man with the goods for sale, and a card telling its germinating qualities.

The field for this sort of organization is enormous. Other exchanges having similar objects are in existence and doing good work. There is a chance for more of them to do better work.

The efficient system used is due to J. Robert Hall

The plan was started by D. H. Doane

F. H. Russell is president of the exchange

E-W

1—241 eggs

2—232 eggs

3—221 eggs

4—221 eggs

5—221 eggs

6—214 eggs

7—218 eggs

8—211 eggs

9—207 eggs

10—193 eggs

1—Polly Toodle

2—Miss Nipper

3—Lady Skettles

Hens Lay 218 Eggs

The Biography of a Hatch Shown in Pictures

By B. F. W. THORPE

IT WAS late in April and early in May, 1913, when the twenty-three Barred Rock pullets of our story broke their prison shells. There were cockerel chicks of course; but that is another matter.

From the start, hustle, bustle, and appetite indicated the vigor with which the chicks were endowed. Only one met mishap in infancy—a wire fence furnished gallows and noose for her self-execution.

While the pullets grow, let me put a question having an important relation to the poultry business generally.

What is a blue-blooded hen? The fancier answers, "The one that gathers in the prizes at the poultry shows." The utility poultryman replies, "The hen from which I can gather the most eggs, without fail, when prices are highest."

Both are right for the returns desired, but poultry keepers are few who can afford to breed for the exacting requirements necessary to get show winners and at the same time develop and retain the quality of heavy continued laying.

Now getting back to our story.

This particular hatch the fancier would probably class "low-browed stuff." Be that as it may, the blood of many generations of egg aristocracy courses their veins; hens whose ancestors hatched, scratched, lived, and died in an egg atmosphere.

When five and one-half months old most of these pullets developed laying aspirations. Twelve were sent to the International Egg Laying Competition at Mountain Grove, Missouri, where they were entered in the official schedule as "Pen No. 59."

New England egg farm — 120 eggs the hen

Two were stolen en route, one overspeeded her egg machinery (ruptured ovaries) and died. One choked to death early in the contest.

Eight that stayed in the race to the end of the competition year laid 1,552 eggs from December 1, 1913, to November 30, 1914, an average of 194 apiece.

These pullets comprising Pen. No. 59 outlaid all pens of Plymouth Rocks, Orpingtons, Minorcas, Anconas, Langshans, nine out of ten pens Rhode Island Reds, eleven out of thirteen pens Wyandottes, thirty-two out of thirty-seven pens Leghorns.

Average American farmflock—72eggs the hen

Stated differently, only eight pens out of one hundred pens in that international event outlaid Pen No. 59 of these Barred Plymouth Rocks.

Eight of the ten pullets remaining at home completed the same full-year period, laying 1,661 eggs—an average of 207.6 eggs the pullet. One was killed on account of ruptured ovaries. The other proved a loafer and went the pot-pie route.

Utah flock white Leghorns — 124 eggs the hen

The ten hens here pictured made the highest egg scores of this hatch. Their average lay for their pullet year of exactly 365 days was 217.9 eggs—a total of 2,179.

Sixteen of this hatch of twenty-three pullets averaged 200.8 eggs in their pullet year.

The egg baskets pictured at the top of the page help to show their uniformity of laying. Basket and hen numbers correspond, thus indicating the production of each hen.

The three baskets in the center of the page represent the relative average production of American farm flocks (72 eggs the hen); that of a New England commercial egg farm of 4,500 hens of mixed breeding (120 eggs the hen); and of a Utah Station experimental flock of 100 White Leghorn hens bred without reference to excessive egg production (124 eggs the hen).

Sairy Gamp, the mother of ten of the pullets that completed their year of laying, laid 217 eggs in her third year of production, and never was broody. Three pullets out of the sixteen were nieces of Sairy Gamp. One was a daughter of the same father but from a cross-bred hen. The hen making the lowest record among the ten was outside blood entirely.

Doctor Woods, the father of all but three pullets in this batch, had a pedigree hard to surpass for fecundity inheritance.

This exhibit is not intended as a phenomenal showing of egg productiveness. The intention of the writer is to point out that good layers can be made the rule and not the exception in any farm flock. What the dairyman accomplished long ago in breeding for heavy uniform production, the poultryman can also do.

10—Betsy Prig

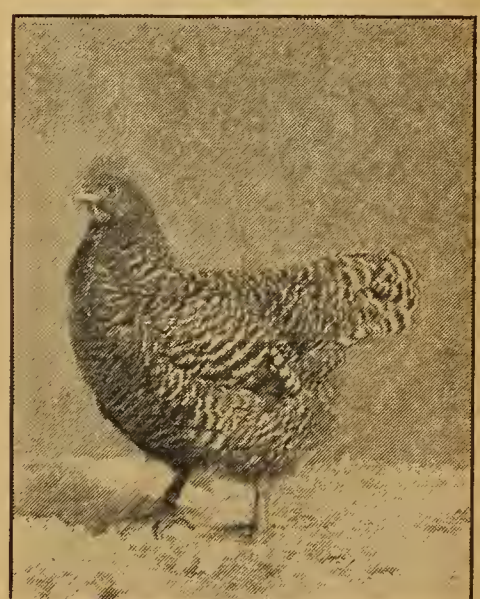
9—Miss Flight

8—Sissie Jupe

4—Mrs. Squeers

5—Lady Tippin

6—Mrs. Podsnap


7—Mrs. Meek

E-W

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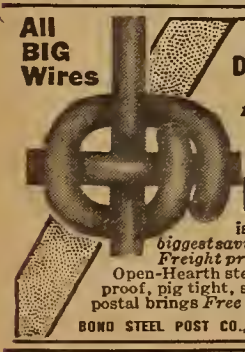

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Why Alfalfa Roots Decay

Rot Attacks the Hearts of the Plants When the Crowns Are Cut

By E. S. RALPH

IT IS just as beneficial to cultivate alfalfa as it is to cultivate corn. It has been shown time and again that the cultivation of winter wheat in the spring increased the yield to a very appreciable extent, and it has also been proved that the cultivation of alfalfa increases the yield in a marked degree.

The writer has made the cultivation of alfalfa a study for a number of years, and is thoroughly conversant with every method of cultivation that has been tried.

But to use a tool for the cultivation of alfalfa that will injure the plants may do more harm than good.

The proof is positive that any tool that injures the crown of an alfalfa plant will cause the root to decay, and I believe, sooner or later, cause the death of the injured plant.

To prove this it is only necessary to refer to the photographs of alfalfa plants dug up several weeks after a disk harrow had been used to cultivate the field. On one plant will be seen where one of the disk blades cut the crown. It will be observed that disease has attacked this crown. You might just as well knock the enamel off a tooth as to cut a portion off the crown of an alfalfa plant.

A number of years ago, in some parts of the country, it was the popular belief that the splitting of alfalfa crowns and roots would cause the plants so treated to spread out; and that, if the roots were split into several parts, you would have just as many additional plants as parts into which the roots were split. Few persons believe this now, and machines designed to split the alfalfa plants have been practically withdrawn from the market.

No Implement Should Injure the Plant

THE most general plan now adopted is to cultivate alfalfa with a disk harrow. I think this practice has also proved a failure. The spring-tooth harrow has been tried out, but the teeth catching on the alfalfa crowns and injuring them has proved this tool also at fault.

A weighted spike-tooth harrow has been employed with less injury to alfalfa plants than any of the foregoing methods. Weights were placed on the spike-harrow frame, and a fairly good job of cultivation was the result. The trouble with the spike harrow was that it had to be freed from trash every few rods, and it was a slow, laborious method.

I know very well that there are many alfalfa growers who will say that they have used disk, spring and spike-tooth harrows with marked success. No one can dispute the fact that they have been successful as far as immediate results are concerned.

It is the lasting results that must be taken into consideration in the cultivation of alfalfa.

Any implement that injures an alfalfa plant will, I believe, cause its death sooner or later.

I have seen many fields of alfalfa where the yield was increased materially by various sorts of cultivation, but in time these fields began to show decline; some of the fields became sickly, thinned out, and finally died. How much of this decline was due to crown injury from cultivation I am not able to say, but I believe from my examination of diseased roots that such injury had a good deal to do with it.

Nature has provided that the ground must produce something. Therefore weeds take the place of the weakened alfalfa plants. If we are going to grow alfalfa, the sooner we eradicate the weeds and supply alfalfa plants in their stead, the greater will be the yield and profit to the grower.

The objects of cultivating are two—the loosening up of the soil and the eradication of weeds.

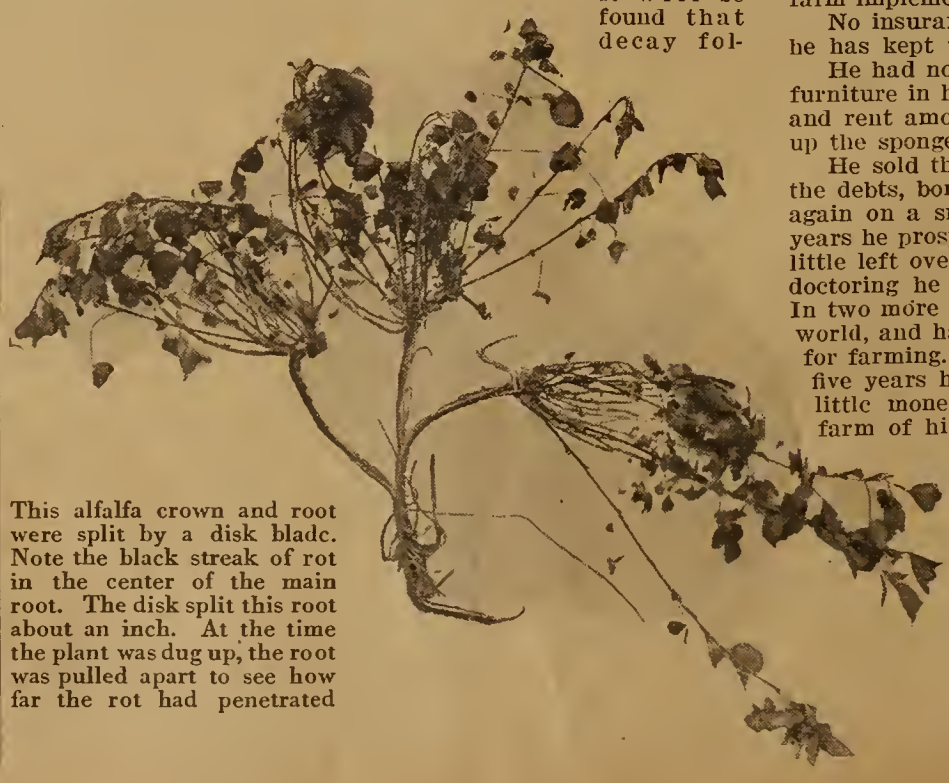
I have never yet seen nodules on sickly alfalfa, and I have never seen an injured alfalfa crown or root that did not produce a sickly alfalfa plant.

I have split hundreds of healthy alfalfa roots and found them white on the inside, and I have never yet split a sickly alfalfa root that did not show decay.

You might just as well expect to produce four carrots, beets, cabbage heads, ears of corn, turnips, and the like, by quartering them as to produce four alfalfa plants by the quartering of an alfalfa root or crown.

Should any alfalfa grower doubt the truth of the assertions made in this article, he can readily verify them by conducting a few experiments. I suggest that he cut off a portion of the crowns of about a dozen alfalfa plants; also that several alfalfa roots be split, say about two inches. Let them stay in the ground for sixty days and then dig them up. It will be found that decay follows the injury. If time enough is given, this decay will creep down to the very ends of the main alfalfa roots. I wish to make the statement that an injured alfalfa plant will not die the first year. In fact, I have seen injured alfalfa plants live for two years, but they had a hard struggle to produce very much foliage. I know positively that the plants shown in the photographs accompanying this article were injured by cutting with a disk harrow, because I followed the disk marks in the hard ground, and traced the marks to the plants in question before digging them. I also know that this was the cause of the rot. A healthy alfalfa plant should produce abundant nodules on the roots, and if it does not do this it has not fulfilled its entire mission. The alfalfa plant draws the nitrogen from the air and stores it on its roots in the form of nodules. I wish to emphasize once more that a sickly alfalfa plant has not produced nodules in any case that has come under my observation. We are just beginning to find out many essential things relative to growing alfalfa, and it is only through experiments that we are able to learn. I am convinced that if alfalfa were properly cultivated immediately following each cutting, the yields would be greater. But as cultivation is usually done it has its drawbacks. I hope observing farmers will criticize this article.

The split crown and root here show some white spots, which are the healthy parts. This white portion is just below the dark-colored rot and will soon be affected



This alfalfa crown and root were split by a disk blade. Note the black streak of rot in the center of the main root. The disk split this root about an inch. At the time the plant was dug up, the root was pulled apart to see how far the rot had penetrated

Hero of the Farm

This Man Reached the Goal Success

By S. SARGENT

MOST of us are too easily discouraged. If we could have the lives of those who have overcome obstacles put before us more often, it would do us all good, and especially it would inspire the young with determination.

There are many heroes in common life, but most of them refuse to tell about their victories. I am going to tell about a friend of mine who has succeeded when most men would have failed, but I can't tell you his name. I should be glad to do it, but he refuses to permit any such thing. So you will have to take my word for it.

This man had a good time when young, I suppose; anyhow, he spent all his money and married on nothing. For him the credit he had won by his good character was his salvation, and he borrowed $2,000 and spent it in equipment for farming. With this equipment in his possession he had no difficulty in renting 80 acres of good Illinois land. For five months things went well with him, but then misfortunes began to overtake him. The first blow was the loss of a fine draft mare.

He had a good crop of corn. This he fed to a fine bunch of hogs, and when they had cleaned up the corn the cholera broke out among them and cleaned up the hogs.

He sort of kept things together as well as he could until spring, when his barn burned, and in it were destroyed a couple of hundred bushels of oats, two cows, all his hay, his farm implements, and what corn was left when the hogs died.

No insurance! This was a fine costly lesson. Since then he has kept things insured.

He had nothing left but two horses, his chickens, and the furniture in his house. He still owed the $2,000, and interest and rent amounting to $760. Most men would have thrown up the sponge; but not he.

He sold the horses to get money to take care of a part of the debts, borrowed another thousand dollars, and faced life again on a smaller farm. He was still hopeful. For three years he prospered, and got all his debts paid and had a very little left over. Then his wife fell sick, and after months of doctoring he was in debt again to the tune of about $400. In two more years, however, he had again got even with the world, and had a little money in the bank and a better outfit for farming. With these he moved to a larger farm, and for five years his misfortunes seemed to be over. He saved a little money and made the first payment on an 80-acre farm of his own. Then he got sick, and for the greater part of a year he lay in bed most of the time, and for two years he was unable to do much work. He rented his farm, but the drought took his tenant's corn, and he got scarcely anything from his land. Debts accumulated.

Are you tired of this hard-luck story? Well, he was, you may be sure. It was about time for better things, and they came to him.

The 80-acre farm is now clear of incumbrance. All the little luxuries which make a home comfortable and do so much to make it happy are his and his good wife's to-day.

Maybe this isn't the story of a hero—but to me it seems that it is.

E

Making Legumes Grow

Treating Seed by New Methods Lessens Cost

By H. D. HUGHES

THE germination of legume seeds can be increased from four to ninety-seven per cent by the use of a new machine perfected by the Iowa Agricultural Experiment Station. The hard seed coats of many legumes are softened by the new device, known as the Ames Hulling and Scarifying Machine, and thus the percentage of germination is increased.

The first machine was built in December, 1913. In order to allow time for field tests comparing treated and untreated seed, and many germination tests, no announcement of the invention was made.

A number of plots were seeded on the experiment-station field at Ames, Iowa, during the summer of 1914, comparing treated and untreated seed from various sources. In many cases, stands which were too thick were obtained from the treated or scarified seed, when the seed from the same sample not scarified or treated, sown at the same rate per acre, and at the same time, failed to produce a stand.

The scarifying machine resembles somewhat a fanning mill. It is a simple device, and can be constructed for $80 or $90. Any person or firm may manufacture the machines and use them without restriction. A patent has been applied for by the experiment station. This was done to prevent some manufacturer from patenting the machine, and making an extra profit because of the patent. Now anyone may receive the benefit of the invention at the actual cost of the materials needed for the construction of the device.

The device as used at the Iowa Experiment Station is five feet long, four feet high, and two feet wide. The materials used in the construction of the machine, the relative sizes and proportions of the materials,

Sweet-clover seed, 20 pounds to the acre, was sown on this ground. The part of the field which received the treated seed had the good stand. The untreated seed gave the result seen in the left of the picture

and the general design of the mechanism may be varied much, without decreasing the efficiency of the machine.

The hopper, or receptacle, for the seeds to be treated is shown in the illustration of the hulling and scarifying machine at 1. From the hopper the seeds are conveyed downward through a chute to the fan case marked 2. The action of the chute leading from the hopper to the fan case can be controlled by any form of cut-off. The seeds are delivered from the chute into the side of the fan case. A fan is journaled within the fan case upon a horizontal axle. It is adapted to run at a high rate of speed, by suitable means such as a direct motor, detached motor, or engine power. The fan operates in a vertical plane, and the lower part of the casing communicates at the throat, shown at 3, with a substantial annular form of chute, designated 4 and 5.

This chute is arranged in the same vertical plane at the fan, and extends upward in a curve to the point on the machine shown at 6.

Sandpaper Scratches the Seeds

The inner surface of the outer wall of the annular spout is roughened, which consists of iron, emery, sandstone, or sandpaper. The rough surface should not extend below point marked 5 on the machine, and should extend to the part designated 6. It is not desirable to have the seeds thrown against the rough surface directly. The seeds are thrown against a hard, smooth surface, and are then carried over the rough surface, and in immediate contact with it, by means of centrifugal force, and the current of air from the fan.

The seed coats of clover, alfalfa, and other legumes vary a great deal with the different seed. And hence it is sometimes necessary to substitute a smooth surface over a part of the distance of the annular spout between 5 and 6.

The seeds, delivered into the fan casing by the chute, are struck sharply by the fan blades. This impact and the air currents from the fan carry the seeds outward, through the throat marked 3, and upward through the spout marked 4.

While in immediate contact with the roughened surface, the hard, impervious coats of the seeds are scratched, punctured, cracked, and otherwise softened. This causes the seeds to absorb moisture promptly.

The seeds are delivered into a sloping bottom compartment at the point of the machine marked 7. The bottom of the compartment is indicated by the dotted line designated 8.

The force of the air blast is reduced greatly in this compartment. The seeds are carried out of the compartment at the point marked 9. A portion of the chaff and other waste particles are carried with the seeds. Adjustable baffle boards, located at points 10 and 11, and fastened at 10 A, and 11 A, let the seed fall to the bottom of the compartment, where they are delivered into a basket or other receptacle at the point marked 12.

Usually the blower is run at a speed of 2,800 to 3,000 revolutions a minute, when sweet-clover seed is being treated. This speed of the fan will require 1,136 to 1,215 revolutions a minute on the drive pulley.

The severity of the scarifying process depends on the speed the blower is run, the amount of sandpaper over which the seeds are blown, the grade and sharpness of the sandpaper, and the kind and hardness of the seed coat of the legume being treated.

The rate of speed may be reduced, or a portion of the sandpaper may be inverted for legume seeds with softer seed coats than sweet clover. The operation of the scarifying machine can be regulated so the number of seeds injured by the process is very small. Not more than one or two per cent of the seeds are broken when the proper speed is used.

The amount the seeds are being scarified can be determined by letting a part of the treated seed run through the hand. Many of the broken seed coats will remain on the fingers. Weighing the seed before and after treatment by the scarifying machine will enable one to tell how much the loss in broken seed coats and hulls is.

The sandpaper or other paper used will not have to be replaced with new until 75 to 100 bushels of seed have been scarified. The sandpaper can be replaced in less than two minutes.

Increases Clover Germination

Unhulled sweet-clover seed is run through the scarifier once to remove the outer hull of the seed coat. It is then run through a fanning mill to clean it. Running the seed through the scarifier a second time scratches the seed coats proper. Eighty-five to ninety per cent of sweet-clover seeds are hulled the first time the seeds are run through the scarifier.

Farmers and seedsmen alike have had unsatisfactory germination from clover, alfalfa, and other legumes. Many farmers have been disappointed sadly in the results obtained from seeding sweet clover. More of this valuable legume would be sown if the seed would give satisfactory germination tests, even when the conditions for germination and growth were ideal.

Few samples of unhulled sweet clover will germinate more than 15 per cent. Only about 50 per cent of the hulled seed is able to grow because of the hard seed coat.

Many farmers are spending thousands of dollars every year to buy sweet-clover seed. From 20 to 30 pounds of the seed is sown to the acre. Since the seed costs from 20 to 30 cents the pound, the expense for seed alone is from $4 to $9 the acre.

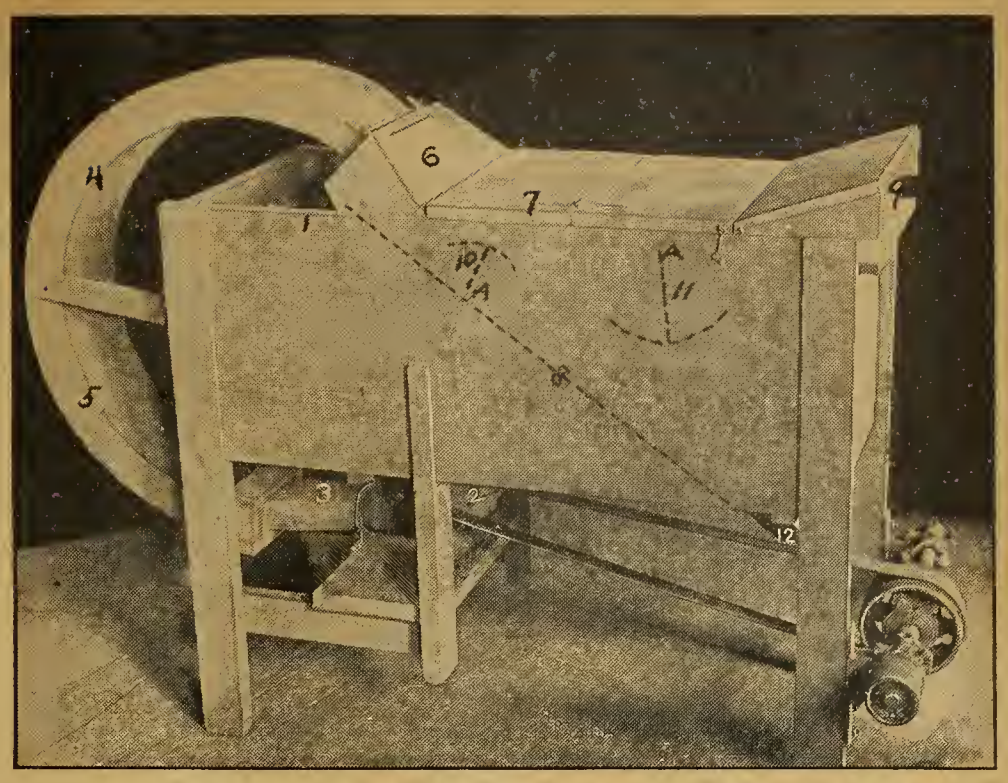
Because nine tenths of sweet-clover seed does not germinate, much money is lost annually by the farmers. The scarifying machine lowers this loss by increasing the germination percentage.

Unhulled sweet-clover seed should not be used except for fall seeding. The freezing and thawing weather of winter ruptures the coats of some of the seed, making possible their germination in the spring.

Thirty per cent of the alfalfa seed produced in Minnesota is hard, according to Arny of the Minnesota Experiment Station. Fifty to seventy-five per cent of the seed cannot grow promptly because it is too hard.

In many Western States in which the production of alfalfa seed is an important industry, even greater difficulty is reported.

Hundreds of tests with red-clover seed, made by the Seed Department of the U. S. D. A., show the amount of hard-coated seed may be 20, 30, or even 50 per cent, and although the greater part of the seed is alive, it is nearly useless for sowing. White clover tests show nearly twenty per cent of the seed is hard.



This new machine which scratches the coats of legume seeds, and so makes them grow, was built in December, 1913. It has been tried out and is now pronounced a success. It greatly lessens the cost of seeding

Apples Led to Wealth

By H. T. DOBBINS

SIXTEEN thousand bushels of apples have been harvested and sold at an average price of 80 cents the bushel from an 18-acre orchard owned and operated by G. F. Beavers of Ralston, Nebraska, during the last three years. The average gross receipts have averaged more than $4,200 the year.

Three thousand dollars was invested seven years ago in the apple orchard by Mr. Beavers, then a South Omaha groceryman. The orchard is six miles from town.

Mr. Beavers had been selling a great many apples through his store, and his object in purchasing the orchard was to eliminate one middleman's profit. Mr. Beavers had been in the grocery business for fifteen years, and all that he knew about apple-growing was contained in the recollections of his early days spent on the farm. After four years' trial of running a grocery store and an apple orchard at the same time, he sold out the store and engaged in commercial orcharding. He had discovered the possibilities of orcharding, and found also that it was a full-sized job.

"There is no secret about my modest success," says Mr. Beavers. "I found out as a grocer that a large portion of the apples I was able to buy were poor specimens, and that the really good ones met with a ready sale. The certainty of good prices in a market that was never oversupplied with good apples led me to abandon the store for the fruit farm. In those four years of running a store and an orchard I learned much about apple-growing that has paid me exceedingly well.

"The most important thing was spraying. After I took personal charge I sent to the horticultural department of the University of Nebraska at Lincoln for information as to spraying. Sixteen acres were planted to Jonathans, Grimes' Golden, Black Twig, Ben Davis, Wealthy, Winesap, and Maiden Blush, now sixteen years old, and two acres planted eight years ago. My first work was to prune so that every limb had an equal chance at air and sunlight. This was done in the winter, asphaltum paint being used to cover wounds made. In the spring I first disked the ground both ways through the orchard, following this with a common harrowing. I kept this up until the first of July, the tree growths preventing the work's being pursued after that date. In dry years this cultivation should be continued till a later date.

"I use power sprayers. The first spray is given when the flower buds open, the second when the petals have fallen and the apple cup is still open, and the third immediately following. By diligent pruning, cultivation, and spraying I have been able to secure gross returns the acre in excess of the original cost to me."

Mr. Beavers uses an automobile in making deliveries to Omaha grocers. Following his business training, he keeps accurate books, and costs and returns are known.

He learned many things about apples during the fifteen years he spent as a retail grocer in South Omaha

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Published every other Saturday by
The Crowell Publishing Company
Springfield, Ohio

Subscription Price
One year (26 numbers), fifty cents. Three years, one dollar. Extra postage for Canada, twenty-five cents per year.

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HERBERT QUICK, - - - - - - - - Editor

June 19, 1915

Cancer and Burns

DR. WILLIAM J. MAYO at Baltimore the other day said certain things about that dread disease cancer which all of us may well consider. Cancer on the surface of the body is not increasing, but internal cancer, especially cancer of the stomach, certainly is. Cancer on the surface, where it can be observed, never begins as cancer, but results from other sores or breaks in the skin or tissues. Especially does there seem to be a close relation between burns and cancer.

Cancer of the lips is not as common since clay pipes went out of style; but when it does occur it usually results from heat applied to the lips in smoking.

Doctor Mayo points to the fact that locomotive engineers often have cancer of the leg from the heat of the furnace, and that in other occupations cancer is most common where heat is applied to the body.

"I cannot get it out of my head," said he, "that the cause of much cancer of the stomach is the drinking of hot drinks." Many people drink fluids too hot to be held in the mouth. The stomach cannot get rid of such scalding drinks, and must suffer actual burns. There is no higher authority in the world than Doctor Mayo, and we may well give heed to his words.

Losing on the Market

WHEN the cattle buyer goes out in the morning for his day's buying he takes with him a full report of the purchases of the day before in the nearest markets in which his employers have an establishment.

Let us suppose that it is the Sioux City market. On this report will appear the killings of the day before at Omaha. He is going to bid on your cattle. Perhaps two of your neighbors had cattle sold the day before in Omaha, and the report will read:

26 steers bought of Smith cost $7.50, dressed 59%.
26 steers bought of Jones cost $7.50, dressed 61%.

Please note that the steers which dressed 59 per cent brought exactly the same price as those dressing 61 per cent. The figures show a greater profit to the packers in buying the best beeves; but what do they show as to the farmer?

They show that Jones fed these best steers six weeks for nothing. After a steer reaches 59 per cent he gains very slowly. What he puts on is "finish," and not weight.

Suppose Jones and Smith had received payment on the basis of what their steers dressed, the six weeks' feeding would not have been lost.

There is too much guesswork in marketing cattle.

It is the custom of most shippers to water their cattle before weighing. Cattle are weighed with 50 or 60 pounds of water each inside of them. The man who does not "swell" his stock in this manner loses the 50 or 60 pounds each, for the buyers assume in every case that the "swelling" has taken place.

This is another case of guesswork, and the shipper loses of course. Why not? As long as the buyers have to guess they guess on a safe basis for themselves. Anybody would.

But if the cattle were paid for on the basis of their dressed weight, all this guesswork would be at an end.

It is too big a question to settle offhand, but it is perfectly sure that as long as there are uncertainties they will be expensive to the farmer. It is a subject well worth thinking about and discussing.

Stock-marketing should not have in it any of the elements of a battle of wits. It should be reduced to a category of certainties. Otherwise it is speculation, not production. No sensible farmer will "lump off" a herd of hogs to a buyer who is sizing up stock all the time. He will ask to have the beasts weighed. That is his only safe course.

Oddly enough, we are "lumping off" our stock to the packers in the yards all the time on such things as the difference between Smith's shipment and Jones's, and the weight of water in the creatures' stomachs. This is not business in any proper sense.

Whence Come Values?

"REDUCED to its lowest terms, property, whether real or personal, gold or silver, prairie land or skyscraper, derives its value from what man's labor has put into it or can take out of it."

So said Dr. George Otis Smith, director of the United States Geological Survey at the University of Illinois recently.

Doctor Smith's geology is fortunately much more accurate than his political economy. The quoted statement is one the error in which any freshman in economics ought to be able to demonstrate.

The value of land does not come from any labor expended upon it at all, though the value of the improvements does. A quarter section of prairie land, or a quarter block in a city available for the erection of a skyscraper, depends, as to selling value, on the presence of the community. The owner of farm land in Illinois or of a lot in Chicago may have been asleep, in an insane asylum, or abroad for twenty-five years, doing nothing on the land, but the value has been running up all the same. "What labor can take out of it" is not the measure of value either, but rather what labor might do on it if given a chance.

The value of land depends on the power of the owner to forbid the exercise of productive labor on it. Whether or not he forbids it has nothing to do with the price.

Absentee landlordism is based on the fact which Doctor Smith ignores.

Avoid Imported Alfalfa

IMPORTED alfalfa seed is not adapted to our conditions.

It is gathered here and there and is of no pure strain.

It is infested with noxious weeds from abroad.

It is especially poor stuff for the Eastern States.

It starts slow after cutting, and is short-lived.

Most of it comes from Russian Turkestan, and is infested with the seed of Russian knapweed—a bad pest.

The knapweed seeds are longer and whiter than the alfalfa seed, and one can usually detect the foreign seed by them if the bulk is examined instead of small samples.

Be as critical as to the character of your seedsman as of your family friends. Unscrupulous dealers can make money by palming off the imported seed as of domestic production. Deal with those only who are above such a policy.

Our Letter Box

Jealousy Hinders County Agents

EDITOR FARM AND FIRESIDE: The place where I was a county agent was a bit unique in the situation it presented for county-agent work. Unorganized for the work and misunderstanding its purpose, the farmers arrayed themselves against the business men of the county-seat town.

There were many shortcomings on both the part of the farmers and the town business men.

The problem was a difficult one to meet because several self-seeking persons kept the farmers, and the town men agitated about the county-agent work. The county newspaper, not understanding or desiring to get the information about what the county-agent work was doing for the persons of the county, published stories about the work that added to the general misunderstanding.

Many splendid men in the county, both in the country and in the towns, are trying to correct the misinformation circulated about the work the county agent has done and planned. Until all of the persons interested in county-agent work in that particular county are not only in favor of the plan but will render all the help possible, the work has been discontinued. THE AGENT.

"Brown Mouse" Trees

EDITOR FARM AND FIRESIDE: Just a card to let you know that my husband and I are each planting a Balm of Gilead tree in our rural-school yard, placing same in the earth in your name, to be called the "Herbert Quick 'Brown Mouse'" tree. I am so much pleased with the story, both for the pleasing manner and the real meaning of it! Am doing my best to talk its principles into our school. I used to live near Sioux City, and as this story is laid in good old Iowa and my native State is Ohio, I feel an interest in what comes from your pen.

MRS. F. E. CUMMINS, Montana.

Everyone Stumbles Sometimes

DEAR EDITOR: I can agree with most of your editorials, but I thought you put on the kid's cap the morning you tried to compare apples and potatoes to cotton as government security for loans, and stumbled some. Don't you know if the South had got 10 cents for her cotton—I mean the grower—you could have sold millions of barrels of apples and potatoes that you did not sell?

E. L. CRAFTS, Arkansas.

Likes to Read Good Fiction

EDITOR FARM AND FIRESIDE: I am a farmer who had what was called a good education twenty years ago. There has never been a time when I would not have boarded up the windows and gone to the city if a reasonable opportunity had presented itself.

Your article in this week's "Post" covers the ground the best of anything I ever read. I have always known that there was nothing the matter with the farm. The trouble is in me.

In some way which I cannot explain you gave me new courage.

"The Brown Mouse" is all right. Farmers need good fiction more than they need advice on milking kicking cows. Come back with another if you can. That story has been thoroughly discussed in this neighborhood, the only criticism being the oft-repeated remark that "there isn't enough in each paper to suit me." GUY SWAN, Michigan.

The Deaf Can Work

EDITOR FARM AND FIRESIDE: Permit me to thank you most sincerely for the invaluable free advertising you gave the deaf, and more especially their impostor propaganda, through that editorial, "They Help Each Other," in the issue of March 27th.

We are endeavoring to educate the public into a realization of the fact a man who loses his hearing is in no ways different from his more fortunate fellows.

For one suddenly to lose a finger or a leg does not necessarily indicate he simultaneously loses his ability to think and reason clearly, toil industriously, and earn a good, honest living—but you simply *can't* seem to make some people realize that fact.

They regard us as "half-wits," "dummies," "dependents," and discriminate against us when it comes to honest toil. "What can a 'dummy' do?" is a favorite quotation of misinformed employers.

The false impression spread by "deaf" beggars is largely responsible for this. Every little bit helps to dissipate this delusion, and for your part again I thank you. J. FREDERICK MEAGHER,
National Association of the Deaf.

Wait Till Congress Meets

DEAR EDITOR: I miss the Farmers' Lobby. I hope you will see fit to continue this department in your paper.

C. B. TUCKER, Virginia.

Farming Not a Fad

DEAR EDITOR: I have just read your "Back to the Land," page 4 of the March 27th issue, and I cannot but regret the conclusion arrived at. The statements are doubtless true, but that does not signify that the facts are necessary. My farm is an example. On this very farm of mine are nine sites of old log houses, each of which once held a large family when it was surrounded by only a few acres and the nearest grist mill was thirty miles away. As this was in 1790, no flour was brought in from outside, yet they lived and thrived. They bought scarcely anything. They must have lived on what we feed our stock. Nearly all the men had been in the Continental army through the Revolutionary War, and to them a little piece of land was a paradise.

It is true, we get very tired sometimes of the drudgery of farm work, and we envy the man who does not have to drag himself through the everlasting and ever-present manure which is so much in evidence in the dairy business, and which is so necessary to success on a farm; but let me assure the man who wants to get back on the land that the call is not a "fad" or a "whim." It is handed down to you from your ancestors, and if you are willing to "tickle the earth" with a hoe and eat the fruits of your labor, a little patch of land is not a bad investment. If, however, you want to make a fortune, better look somewhere else.

W. C. MABEN, New York.

"As Others See Us"

FARM AND FIRESIDE is the best and cleanest secular paper I know of.
CHAS. W. BOCKWAY, Illinois.

I LIKE Mr. Quick's letters. That was a fine piece in the "Saturday Evening Post." MRS. E. E. LUTZ, Ohio.

I VALUE FARM AND FIRESIDE above all my magazines, for it seems as if there is a page for all. MRS. M. MCCARY, Texas.

WE LIKE the paper, and find many helps in the way of care of poultry and garden.
MRS. MARTHA HOOVER, Minnesota.

AM A homesteader. We like FARM AND FIRESIDE immensely. It always brings sunshine to our home.
H. T. BACON, Colorado.

WE COULDN'T possibly get along without the dear old FARM AND FIRESIDE, any more than we could get along without washing. MRS. L. L. CONGER, Ohio.

I ENJOY FARM AND FIRESIDE very much, and when I am through with it I give it to my neighbor, who calls for it regularly and seems to enjoy reading it.
DR. O. ELLISON, Ohio.

FARM AND FIRESIDE should be in every farm home in our land. No farmer should be without it. We farmers should try to make it a better journal than it is.
A. B. WHITE, Kentucky.

I WOULD miss FARM AND FIRESIDE, for there are so many good articles printed in it. The editor's page is the best, for it gives one so many inspirations to keep on in any undertaking.
COLUMBUS E. HAMILTON, Indiana.

I HAVE been a subscriber nearly fourteen years, and I want it at least sixty-five years yet. I am now forty-three. There is more information in that paper than in any other magazine I ever read—practical information for farmers.
JOSEPH H. ELLETT, Utah.

WE ARE having gentle, soaking rains that give promise of good crops this year. The pastures are as good as I have seen them here, and stock is in fine condition. We can hardly wait for the next copy of the paper to come.
MRS. A. J. PETERS, Texas.

EW

WHISKY is a good thing in its place. There is nothing like it for preserving a man when he is dead. If you want to keep a man dead put him in whisky; if you want to kill a live man put whisky in him.—From a recent decision of the Mississippi Supreme Court.

The Jitney Bus

JITNEY is a new word, and means the same as five cents. Bnsses like this one will make the word permanent.

This Jitney Bus does its work in the country. The driver designed the body of it himself. It seats eight people comfortably, and will carry ten. He makes

honrly trips four miles from the city through thickly settled rural districts. The fare is five cents, and his receipts average about $6 a day. This is in southern California where there are boulevards most of the way.

Takes Grease From Wool

By Alton D. Spencer

A NEW process for removing grease from wool has been invented by S. K. French of Brooklyn, Michigan. The method involves centrifngal force, and does away with the great waste of grease resnlting from previous methods.

Mr. French's first experiments were conducted in his garage in Brooklyn with an old cream separator. Pnnching holes in the separator bowl, he packed it full of wool, gave it all the speed consistent with safety, and turned on steam. When the right speed and temperature were reached the grease and wool separated.

Even with his crnde machine Mr. French was able to take out more than 90 per cent of the grease. He is now building a machine along rotary lines to make it a continuous process instead of having to treat the wool in batches.

In the former method of wool-scouring an enormons qnantity of alkali was used to turn the grease into soap and rid the wool of it. Almost every mill lets the grease go down the river, as it is too expensive to reclaim it from the alkali and other impurities. The refined grease, however, sells at a good price as lanolin, which may be purchased at any drng store for 10 cents an ounce.

Wool grease forms the base of many high-priced cosmetics and ointments, and is valued for its healing properties.

Music for the Summer

By David Mannes

WHAT are you going to do with your schoolhouse this snmmer? I know a community which is planning to make its schoolhonse into a music club.

Almost every neighborhood has in it someone who knows a little more about music than the rest of the people, and who would welcome the chance to give lessons or to train a tiny chorus or orchestra for a price which wonld become very small when divided among a number of people.

Somebody would surely lend a piano, somebody else an organ, and several families might club together to rent or buy a few other instruments.

If your commnnity has no member who wishes to undertake this work, you could get, by applying to the women's mnsic clubs of your State, addresses of teachers, probably idle through the summer, who would be glad to come to an arrangement with you.

FARM AND FIRESIDE stands ready to assist such endeavors with information and advice.

If a mnsic clnb made a good start with a teacher in the summer, it could continue its work alone in the winter and make the deep silences of frosty evenings harmonious with song.

Do yon know the wonderful story of the Litchfield Chorus? In Litchfield County, Connecticut, where small towns climb np and down steep hills, there were organized in five of these towns singing classes called the Litchfield Choral Union, under the care of one teacher.

Seven hundred people belong to these classes, and drive for miles on cold, snowy nights to their rehearsals. Once a year these classes have a great festival together at Norfolk.

There is a similar musical organization in Kansas; and nowhere in the world is the strange and majestic genins of Bach better nnderstood and interpreted than in the mining town of Bethlehem, Pennsylvania.

But even if there is no genius among you, let the many silent organs and pianos sound forth this snmmer. Force the stiff fingers to limber up and the timid voices to sing out. It will make people—not old, God forbid!—but wise and happy and wholesome.

Don't be afraid of classical music. Before condemning, wait at least till you've tried to play and sing it. It has virtue not to be fonnd in ragtime: you don't get tired of it, for every time you hear it yon find in it a new idea and a new beauty. It is just as perpetually delightfnl as you expect your best friend to be when you love her first.

In the summers the writer and his wife play once a week, in a country place, recitals of Bach, Mozart, Handel, Beethoven, Brahms, Schumann, and Grieg.

Horses, automobiles, boats, and unaided feet bring in crowds of farmers with their families to listen to the compositions of these great masters.

Many years ago, Dr. Leopold Damrosch said: "There are few things you can do for people so helpful and good as to give them the means of making music in their own homes. It keeps out so many other things that are undesirable." And Sidney Lanier has also said: "To make a home ont of a honsehold, given the raw material—to wit: wife, children, a friend or two and a house—two other things are necessary. These are a good fire and good music. And inasmuch as we can do without a fire for half the year, I may say music is the one essential.

Late explorers say they have found some nations that have no God; but I have not heard of any that had no mnsic. Music means harmony; harmony means love; love means God."

These are high-sounding phrases, but they mean something all the same. In every-day language they mean that music will dispel the loneliness and silence the grnmbling of a fretful home; that it will give the children the stay-on-the-farm spirit and the spirit of community service.

The power of music to direct the thoughts heavenward is acknowledged by every church service. There are six days in the week beside Sunday when we might be kinder and better than we are. This summer, at least, let us set the music pealing every day, and see how it helps us to be Christians all through the week.

The Fertilizer Lasts

By J. O. Hall

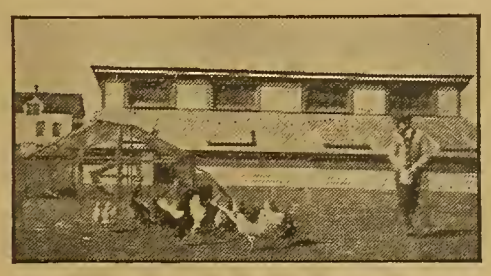
I HAVE seen the effects of fertilizer three and four years after its application. My potatoes are fertilized in the drill, and I often sow grain, grass, or alfalfa after digging the potatoes, without plowing the land.

On poor soil fertilizer pays for itself the first year several times over; pays for itself once the second year, perhaps again the third year, and the benefit is still not all exhausted.

A Modern Poultry Boy

By J. L. Graff

HERE is an Illinois poultry boy who has skylights in the scratch pen of his henhouse. These windows may be opened slightly so as to admit air. There is a window also in each gable end.



The interior is arranged with all of the most modern utilities for roosting, laying, and hatching, and it will be noticed that there is a run wired in in the front.

New Books

THE GARDENETTE, by Benjamin F. Albaugh, discusses intensive gardening and floriculture suited to the needs of farmers and others wishing to make the most out of small areas of land. Among the excellent features of this book are lists of vegetables and flower varieties, planting tables, and plant-protective remedies. 133 pages, well illustrated. Stewart & Kidd Co., Cincinnati, Ohio. Price, $1.25.

THE BOOK OF RECORD AND USEFUL INFORMATION FOR THE FARM is the title of an exceptionally complete system of bookkeeping. It is large enough for ten years' records or more, and provides space for the inventory, crop record, cash account, insurance and mortgages, labor records, dairy and poultry account, and stock-breeding records. It contains numerous reference tables.

Cloth bound, size 8 by 14 inches, 70 pages with index. Published by the Rock Island Plow Company, Rock Island, Illinois. Price, 75 cents.

DE LAVAL SEPARATORS

Save in 7 Ways

QUANTITY of cream that no other separator will recover completely, particularly under the harder conditions of every day use.

QUALITY of cream as evidenced by De Laval butter always scoring highest in every important contest.

LABOR in every way over any gravity system, and also over any other separator, by turning easier, being simpler, easier to clean and requiring no adjustment.

TIME by hours over any gravity system, and as well over any other separator by reason of greater capacity and the same reasons that save labor.

COST since while a De Laval cream separator may cost a little more than a poor one to begin with it will last from ten to twenty years, while other separators wear out and require to be replaced in from one to five years.

PROFIT in more and better cream, with less labor and effort, every time milk is put through the machine, twice a day, or 730 times a year for every year the separator lasts.

SATISFACTION which is no small consideration, and can only come from knowing you have the best separator, and being sure you are at all times accomplishing the best possible results.

Easy to prove these savings

These are all facts every De Laval local agent is glad of the opportunity to prove to any prospective buyer. If you don't know the nearest De Laval agency simply write the nearest main office, as below.

THE DE LAVAL SEPARATOR CO.

165 Broadway, New York 29 E. Madison St., Chicago

50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

Eli HAY BALERS

More bales per hour. Fast, big feed—won't choke. Dense, uniform bales that pack better and bring higher prices. Many exclusive construction advantages. Must be seen to be appreciated. L. J. Campbell, Caldwell, Kans., writes: "The most perfect baler I ever saw." You'll agree. 40 styles and sizes. WRITE FOR LATEST CATALOG and tell us what you bale. We'll recommend best machine for you.

COLLINS PLOW COMPANY, 1116 Hampshire Street, Quincy, Ill.

Canadian Wheat to Feed the World

160 ACRE FARMS IN WESTERN CANADA FREE

The war's fearful devastation of European crops has caused an unusual demand for grain from the American Continent. The people of the world must be fed and there is an unusual demand for Canadian wheat. Canada's invitation to every industrious American is therefore especially attractive. She wants farmers to make money and happy, prosperous homes for themselves while helping her to raise immense wheat crops.

You can get a Homestead of 160 acres FREE and Other lands can be bought at remarkably low prices. Think of the money you can make with wheat at its present high prices, where for some time it is liable to continue. During many years Canadian wheat fields have averaged 20 bushels to the acre—many yields as high as 45 bushels to the acre. Wonderful crops also of Oats, Barley and Flax.

Mixed farming is fully as profitable an industry as grain raising. The excellent grasses full of nutrition are the only food required either for beef or dairy purposes. Good schools, markets convenient, climate excellent.

Military service is not compulsory in Canada, but there is an extra demand for farm labor to replace the many young men who have volunteered for the war. The Government this year is urging farmers to put extra acreage into grain. Write for literature and particulars as to reduced railway rates to Superintendent Immigration, Ottawa, Canada, or

M. V. McINNES, 176 Jefferson Ave., Detroit, Mich.
W. S. NETHERY, Interurban Bldg., Columbus, O.
Canadian Government Agents.

Firestone

The Tires That Have Always Delivered Most Miles per Dollar

THIS service brought the volnme; tremendous volume brought down the cost of production; factory efficiency, international marketing facilities—all these bring down the cost to you—so that now you can get Firestones at the price of ordinary tires. Your dealer is doubtless supplied.

Free Firestone Offer

Send us your dealer's name and the make of your tires and we will send you, free, a fine, waterproof, rubberized Tube Bag. Every car-owner should have one. Ask, also, for our Free Book No. 45 on "The Care and Repair of Tires." Address

Firestone Tire and Rubber Company
"America's Largest Exclusive Tire and Rim Makers"
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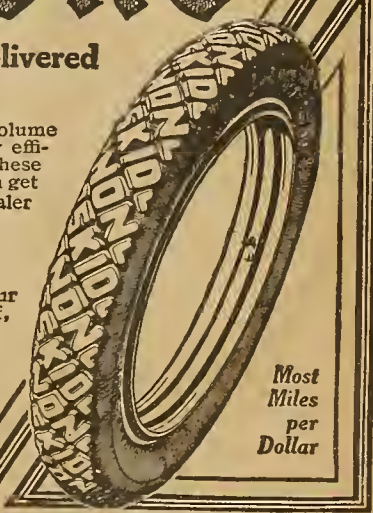


A scene on the Bonalevo Farms near Batavia, N. Y., where the three silos are filled each year with a No. 13 Blizzard.

The regular farm gasoline engine furnishes plenty of power to make things hum with the

BLIZZARD Ensilage Cutter

It is very light running because so simple and compact. Heavy fly-wheel carries both cutting knives and elevating fans.

The Blizzard is the tried and true cutter for the farm. Simple, strong, safe. Only small power needed. Big capacity and unlimited elevating ability. Self-feed table saves one man's labor. Runs steady as a clock. Many in use 14 and 15 years. Repair expense little or nothing.

Write for latest Blizzard catalog—and see your dealer today.

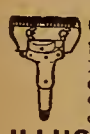
The Joseph Dick Mfg. Co.
Box 28, Canton, Ohio

ABSORBINE STOPS LAMENESS

from a Bone Spavin, Ring Bone, Splint, Curb, Side Bone, or similar trouble and gets horse going sound. Does not blister or remove the hair and horse can be worked. Page 17 in pamphlet with each bottle tells how. $2.00 a bottle delivered.
Horse Book 9 K free
W. F. YOUNG, P. D. F., 23 Temple St., Springfield, Mass.

ARUNDEL SILOS $66 UP

A remarkable bargain at $66. for 8 x 16 ft. size. Other sizes as low in proportion. All doors, hardware, staves, etc., finest quality. Credit Extended. Write for special proposition "Silo 72."
ARUNDEL SILO BUILDERS BALTO. MD.



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MAKERS of Hand and Power Clipping Machines for Horses, Mules, Cows. FREIGHT CHARGES prepaid, United States or Canada, on complete machines ORDERED DIRECT by users.
ILLUSTRATED PRICE LIST FREE.

Shetland Ponies—3 and 4 year olds, $150. Weanlings, $50.
HARTZELL BROS., Established 1883, SEBRING, OHIO

LARGE BERKSHIRE SWINE HARPENDING, DUNDEE, N. Y.

COW PEAS at **WHOLESALE**
MILLET AND CLOVER Write for prices. C. N. Robinson & Bro. Dpt. 165, Baltimore, Md.
Seed Growers and Importers. Established 1870

207 Acres $11,000
Splendid Farm with Full Equipment

High grade modern New York State dairy and grain farm, in rich farming section surrounded by some of the best farms in the state; splendid buildings, productive land, good location; cuts 75 tons hay besides other crops, 30 acres spring-watered pasture, lots of wood, 400 sugar maples, 60 apple trees, other fruit; fine 2-story 17-room house, bath, big barn, running spring water, silo, other buildings; estate must be settled, quick buyer gets 12 cows, all wagons, machinery and tools, $11,000 on easy terms; photo of handsome residence, all details, traveling directions, etc., page 24, "Strout's Farm Catalogue 38," write today for your free copy. E. A. Strout Farm Agency, Station 2699, 47 West 34th St., New York.

Agents $60 a Week
Big Summer Seller

Outdoor Lamp and Safety Lantern
Burns Kerosene. Can't explode. Can't set fire to anything. Burns in all kinds of weather. Rain proof, wind proof, bug proof. Costs only 1/10 of a cent an hour. For farmers, teamsters, hucksters, plumbers, dairymen, campers—everybody needs it.
Big spare time money maker
Night time best time to demonstrate. Jennings sold 5 first evening. Your territory open. Write quick for terms and free sample.
Thomas Lantern Co., 346 East St., Dayton, O.

NO CLIMBING OF TOWERS IN OURS
Every bearing is constantly flooded with oil. Two quarts of oil in the gear case of the 8-foot Auto-oiled Aermotor will keep the gears and every bearing flooded with oil for a year or more. With its duplicate gears and two pitmen lifting the load straight up it is unbreakable. It runs in a breath of air. The galvanized helmet covers the gears, keeps out rain, keeps out dust, keeps in oil. If you are tired of climbing a windmill tower; if you are tired of buying repairs and having them put on; if you are tired of waiting for a big wind, let us furnish you this self-oiling, ever-going mill to go on any old tower. It costs but little and you will get the difference between no water in a light wind and an abundance of water in almost no wind. Write
Aermotor Co., 1146 S. Campbell Ave., Chicago furls mill.

Three Times a Winner

By Dudley Hall

Dudley Hall—corn grower

THE land on which I grew my prize corn was purchased by my father fourteen years ago. It was then lying idle and was not considered worth working. It has never had any manure applied to it, but we have raised peas and clover, and with those two crops the land has been brought up to the point where it will raise good corn. Many other South Carolina farms have been so improved.

On the acre which I used to raise corn I made 125 bushels in 1910, 129 in 1912, and my yield last year was 148.9 bushels. The first year I won the first district prize, which was a trip to the National Corn Show held at Columbia, South Carolina. The second year I won a district and a county prize, which were both in cash. Last year I won first state prize, which was a scholarship in our agricultural college.

I used the same kind of corn every year. It was a yellow corn my father got from a neighbor ten years ago.

The soil is sandy loam. It was in oats the year before I made my highest yield, and when the oats were cut the land was broken and subsoiled to about 15 inches deep. The 1st of September it was prepared and sowed in crimson clover. We got a good growth to turn under.

I began to prepare the land for corn about the middle of May by disking the clover. It was so dry that I did not get a very good job of it, but I planted the corn as soon as the land was prepared. It continued dry, and I did not get a good stand, so I worked it over and planted again the 15th of June. This time I got a good stand. I did not get to cultivate it more than four times, for we had a severe windstorm the 3d of August which blew it down.

I used home-mixed fertilizer—200 pounds 16-per-cent acid, 100 pounds of cottonseed meal, 25 pounds of potash—drilled in with a wheat drill at the rate of 400 pounds per acre.

Needless Seed Losses

WE LOSE immense amounts of money every year in sowing useless seeds. This is especially true of the legumes—clover, vetch, sweet clover, and the like. Nature has made provision for the preservation of these plants which we must admire, but which in farm operations are useless and expensive. Nature, in short, has given them some seeds with such thick, hard coats that it takes more than one year for them to germinate. This is a fine thing when the plant has to shift for itself, for the seeds which must be soaked for a year or two may save the plant from destruction when a bad year wipes out the first-year sproutings.

H. D. Hughes of Iowa has invented a machine which scratches the shells of the seeds and lets in the moisture. It is a very simple machine. The seeds are blown against sandpaper by a blast of air and their coats scarified, or scratched.

Professor Hughes, who is with the Iowa State College of Agriculture, tells on page 7 what this machine is and what it can do. The results with it are remarkable. Seeds that are treated will go twice as far in many cases as untreated seed. Seed made a 98-per-cent record of sprouting which when left untreated made only 50 per cent. One man got a perfect stand of clover with five pounds of scratched seed to the acre. It is simple, sensible, and very valuable.

If every seed grew and made a vigorous plant, three pounds of alfalfa seed would make a perfect stand. Farm advisers recommend the sowing of from 20 to 25 pounds to the acre "in order that the alfalfa will combat the weeds." The answer to this is that there should be no weeds. Then we sow all these small seeds on roughly prepared soil, and often two thirds of them are either not buried or put down beyond the possibility of making their way to the surface.

A disk seeding machine, built especially for such seeding, which will put every seed to the proper depth and leave none on the surface, will soon pay for itself on a farm where as much land is put in small seeds as should be so used.

With the best seeding machine possible, the best possible preparation of the land, and one of Mr. Hughes' scarifying machines, the farm should find the expense of the seeds of clover, vetch, alfalfa, sweet clover, and the like, so far cut down as to make the burden much lighter. It has been a heavy burden on many of us.

Chinches and Flies

JEWELL MAYES of Missouri says that neither chinch bugs nor Hessian flies are likely to ruin wheat; hence, says he, "resist that panicky feeling" and don't plow up the crop.

Have a community day for burning everything burnable in fence rows, turn rows, corners, weedy patches, gullies, and all lurking places for the chinch bug. Do this next fall.

This year's bugs? Well, they are harder to fight, but don't surrender the trenches even this year.

The plan of inoculating the bugs with disease has not been a brilliant success, and sprays do very little good.

Open a deep ditch about the cornfields with a plow, drag its bottom to dust, and the bugs will have hard work to cross it. They can be killed in large numbers in this ditch with a dragged log.

When the corn is in tassel or past that stage, it is a good plan to fill this ditch with green corn, which should be kept wet. The chinch bugs will crawl into the pile to feed, and will get a contagious disease.

Mr. Mayes states that bushels of bugs died of this treatment in Caldwell County, Missouri, last summer.

Another plan is to cultivate and drag to dust a strip about the field, and make a dead line on this dust with tar or heavy oil—road oil is best. The line need be no wider than a lead pencil, but must be kept perfect by using the oil can once or twice a day.

Where the bugs are in trouble outside the ditch or oil barrier, postholes dug for them will catch many, and then they may be burned by using oil or straw.

A belt of millet around the field will delay them a while, and while they are a-milleting they may be plowed under. There's no need of getting scared. Chinches can be fought.

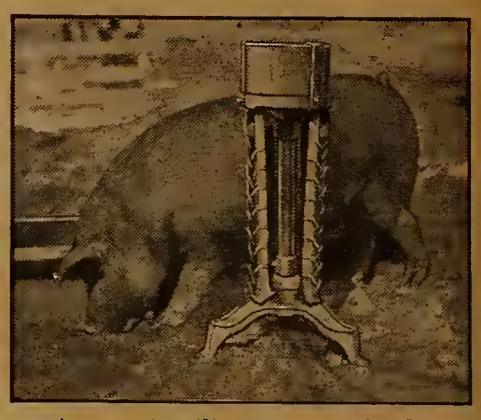
Paint Makes Pride

SOME yards may have a depressing effect, but the one in the picture shows how attractive just an ordinary yard may be made. A neat fence, white paint (or whitewash), shrubbery, trees, and well-kept lawn—these are little things in themselves, but big in the amount of beauty and home pride they produce.

Let the Hogs Work

THERE is only one thing the domestic hog enjoys more than to have his back scratched—that is, to scratch his own hide.

Just as the wearer knows best where his shoe pinches, so knows the hog to a nicety where his lice bite the hardest.


Automatic oiling posts apply the remedy where it is needed

In the days of stumps, stubs, log and rail fences, each hog had his own favorite rubbing places. These were worn and polished by generations of hogs, big and little.

Now every post carries a wire fence, and a hog has come to expect that each post, like the rose, has its thorn.

Taking advantage of this inclination to rub himself rid of his lice enemies, the inventor has gone the hog one better and furnished automatic rubbing posts and rubbing logs with which the hog tickles his hide and annihilates his lice at the same time.

These rubbing posts and rubbing logs are made and loaded with lice-exterminating oil so as to accommodate the sucking pigs, the shotes, and the hogs higher up.

It's a case of letting the other fellow do the work and furnishing him enjoyment while so doing.

Did the Operating Herself

THE cover picture on FARM AND FIRESIDE which showed the man and woman giving medicine to a chicken recalled an experience of my own which may benefit someone else.

I had a fine bunch of Leghorn hens, and one morning I noticed one of them standing huddled up in a corner of the yard, and when she tried to walk she moved as if it was very painful. When I picked her up I found her crop was enormously distended. I had not supposed it possible for one to get so large. And it was perfectly hard and knotty, showing that it was filled to the limit with something hard and small.

We had an outhouse filled with dry peas, and when I investigated I found a knothole in the floor and a little mound of peas under it.

Of course I knew then just what that hen had in her crop. She had evidently eaten all she could, and the moisture in the crop was making them swell.

Well, I was "up against it," for I wanted to save that hen, and so far as I could see, an operation was the only thing that would do it.

Now, I never could bear the idea of using a knife on anything, but I gritted my teeth and hunted up an old razor. I scalded it well, got a pan of clean water, and a little cloth, and went after those peas. Holding the hen, back down, between my knees, I made a cut about an inch long in her crop. Then, very carefully, I worked the peas out one by one, using the cloth to wipe away the blood. I kept at it until I had at least one third of them out, then put a few drops of turpentine on the wound, and let poor Biddy go.

For about a week she stood around, all humped up, and I was feeling very doubtful of my skill as a surgeon. But at last she decided that life was worth living, and soon began singing.

In about a month she showed her gratitude by getting into the house,

E

where she laid a pretty, white egg. And there were many more afterward.

So I think it pays big to go ahead and do the best you can.

MRS. IDA RICHARDS, Colorado.

Sold at $153 an Acre

By James B. Morman

THE photograph shows a few Hubbard squashes from my crop grown in 1914. These were all grown on a space of 36 by 60 feet, the total weight being 512 pounds. This is practically equivalent to

These Hubbards yielded at the rate of five tons to the acre

five tons an acre. The squashes not required for our home use were sold at 1½ cents a pound, or at the rate of $153 an acre.

An advantage of late planting is that in many parts of the Middle Atlantic and Southern States a crop can be grown after the early potatoes have been harvested. In fact, my crop was planted between alternate rows of early potatoes.

I am convinced that under my conditions here in Maryland late planting gives best results, and the land is made to do double duty, too.

Some of the largest and best Hubbards weighed from 12 to 15 pounds apiece, and were raised from the last planting on July 20th.

WIGGLERS may be prevented from turning into mosquitoes by spraying the water in which they wiggle with a mixture of about equal parts of crude oil and kerosene. Once in ten days will keep them under control.

Three-Cent Hogs?

Hobson Says Not

MR. W. H. HOBSON of Jones County, Oklahoma, does not believe that it is possible to grow three-cent pork by using peanuts as a forage crop. Here is his letter. It is a "come-back" on Mr. Schoffelmayer's article on Spanish peanuts. Mr. Hobson is no novice in peanuts, but a man of experience.

The statment that a negro living near Oklahoma City is producing pork at a cost of three cents per pound by feeding peanuts to hogs is "important if true."

Unfortunately it is not true. It is not necessary to go outside of the article itself for the proof.

The article states that peanuts usually sell at 65 to 95 cents the bushel, which is a fair statement of Oklahoma City prices.

A bushel of peanuts weighs 22 pounds, and at the lowest price mentioned the man who produces pork at 3 cents must produce a pound of pork by feeding one pound of peanuts, while at the higher price he must produce a pound of pork with less than three fourths of a pound of peanuts. He is certainly "some feeder."

The statement cannot even be defended on the ground that three cents the pound means the labor cost, because as soon as the crop is produced it is worth at least 65 cents the bushel, and if the labor cost has been only one cent per bushel it is almost criminal waste to feed them to hogs.

But, says the advocate of peanuts as hog feed, the hogs will harvest the crop. So will hogs harvest a corn or wheat crop, or, in fact, "most any old crop," and most of us are familiar with neighborhood quarrels or lawsuits growing out of the tendency of hogs to harvest crops.

Cost of Harvesting Peanuts

The labor cost of harvesting an acre of peanuts is little more than that for harvesting an acre of corn, and usually the hay will about pay for harvesting and threshing.

On the other hand, the labor cost of producing a peanut crop is from two to four times as much the acre as a corn crop, while the seed cost is about ten times as much, so that harvesting a corn crop with hogs is a much better business proposition than harvesting peanuts, even if peanuts were an economical hog feed.

I have often heard an argument like this: "Peanuts will yield on an average twice as much an acre as corn, and chemical analysis shows they have a much higher feeding value, yet the farmers persist in growing corn for hog feed and then complain of hard times."

These critics entirely overlook the fact that yields are figured in bushels and feeding values in pounds, and as a bushel of corn in the ear weighs 70 pounds, and a bushel of peanuts in the hull weighs 22 pounds, the man who continues to grow corn for hogs may not be such a fool as he looks.

I have lived in the vicinity of Oklahoma City twenty-six years and, so far as I know, have never met the negro referred to in the article, but I have known several men who tried feeding peanuts to hogs and never knew one who continued the practice.

I strongly suspect Mr. Smith figures his profits on peanut-fed hogs like some farmers I have met who would say, "I sure did make some money on that bunch of shotes; they brought me $14.27 apiece."

If you should ask, "How much do you figure it cost you to feed them?" he would reply, "Oh, it didn't cost me nothin', I growed all the feed myself."

Mr. Schoffelmayer mentions a case of 800 pounds of pork produced from an acre of peanuts.

I believe there is an official account of a Southern boy who raised 250 bushels of corn on an acre, and as a bushel of corn should produce ten pounds of pork, this boy could have produced 2,500 pounds of pork from his acre of corn.

The real question is not whether or not, by using peanuts as a forage crop, pork can be made for three cents.

Plenty of people have said that it was impossible to grow a hundred bushels of corn to the acre, but much more than twice that has been grown.

The college professors used to say that a baseball could not be pitched in a curve, but the pitchers found out how it is done.

Peanuts may be worth too much to make such cheap pork possible, after they are harvested and prepared for market, but the peanut in the ground is not so valuable, and that's where the pig finds it.

The real point is whether or not peanuts are a valuable forage crop to use in connection with other crops in making cheap pork. That it is such a crop Mr. Schoffelmayer proves.

Don't Feed Peanuts Alone

Peanuts alone would not make good cheap pork, no matter how cheap the peanuts were. But fed with other crops they are a splendid feed. Gray, Duggar, and Ridgeway of the Alabama Station tested them out on lots of pigs and found that an acre of good peanuts is equal to 3,200 pounds of corn in feeding value, and that when the swine are allowed to forage the crop the increased fertility of the land will more than pay the expenses of growing the peanuts.

The peanut kernel contains a fraction less than 20 per cent of protein (in which corn is sadly lacking), and just a little less than 40 per cent fat. It is therefore a wonderfully rich food. It does not make good pork, however, when fed alone, and should not be so fed. Foraged along with corn, rape, alfalfa, and other crops it will pull the stroke oar in making cheap pork, whether it cuts the cost down to three cents or not. And so far as that is concerned, our friend Hobson should not forget that actual tests made in Alabama in pork production on forage show results not far above those mentioned by our contributor. Cottrell thinks that wherever peanuts can be grown successfully every farm should have its peanut field. That, really, is Mr. Schoffelmayer's message.

LEGUME tops are richer in nitrogen than stable manure. A crop of sweet clover weighing 17 tons green per acre yielded 185½ pounds of nitrogen, or as much as would have been contained in 16 tons of fresh manure. There was in all probability quite as much more in the roots. "Green manure" is real fertilizer.

After Strawberries, What?

By C. R. Weidle

THE soil from old strawberry fields is generally quite fertile.

For a number of seasons I turned my old strawberry patches as soon as the berry season was past, and planted late potatoes, using small whole potatoes. Cut seed planted this late in the season is not apt to grow well. Good crops of potatoes grew without fertilizer, but were a little late in ripening.

The past few seasons I have planted some kind of forage crop for swine on my old strawberry ground with good success. I have planted soy beans and rape together, first drilling the rape seed, mixed with fertilizer, with a grain drill, then drilling the soy beans in rows with a corn drill afterward.

Even rye sown early will furnish a lot of good fall pasture for pigs.

When old strawberry patches are used for replanting again to strawberries, by planting some late crop after the berry season the old sod is broken up and the soil put in much better shape for this purpose the following spring.

Some late market crops can be grown to advantage, but forage crops will be found much less trouble.

I fence the piece for hogs by driving stakes about a rod apart and use a 32-inch woven hog fence. Simply stretch up the wire by hand and staple to the stakes, being careful to keep the lower wire tight on the ground to prevent the pigs from getting under.

The Oven Bird

By H. W. Weisgerber

WE ARE so accustomed to seeing birds hop, especially the smaller ones, that when one is seen walking along with well-measured strides it seems quite an oddity. But such is the habit of this little warbler. He walks. That is, he does not hop as does the robin, nor run, nor flutter along with the wings, as do many members of the warbler family.

The oven bird gets his name from the shape of his nest. This is built on the ground and arched over with leaves and dried grass, and resembles a Dutch oven.

Its song, according to Mr. Burroughs, is, "Teacher! Teacher!! Teacher!!! Teacher!!!!" beginning low and increasing in volume until the air fairly rings with the noise.

The birds breed in the northern half of the United States, and are found in the open woodlands. They are ground warblers, but rise to lower branches to sing.

Baby Chicks and Hens

By E. L. Vincent

WHEN my boy and I were talking over poultry matters the other day, we agreed that a good deal of what is said and written on this subject is quite wide of the mark.

My son is giving a lot of special attention to poultry. Here are some of the things I got from our conversation:

"What time in the life of a chick do you think we ought to be most careful to make sure to have her laying early next winter?"

"From the minute it comes out of the shell," he answered, "right through to the end. You can't let up any time."

Then this young caretaker said a few things that I do not suppose some folks would consider of much importance.

"If you do not pay attention to the water your hens have, so that they have all they want of it before them all the time, you will not get so many eggs. You may not see any difference the very next day, but in a day or two the yield will fall off, and stay off for several days. Just one day's lack of water will do that. You have to give your hens water enough. And then, it is just the same way with everything else. You have to be right on your job all the time. There is no place for a let-up. Hens are queer things. I don't know much about them, and don't know of many folks that do. You just about have to live with them."

"Going to plant this field near the henhouses to corn this year?" I asked.

"I don't know of anything better I could do with it. The hens fairly live in the cornfield as soon as it is safe to let them, and then until it is harvested. It is good for them."

You have got to keep a hen busy. The piece of corn we plant near the henhouses seems just to fill the bill. The hens can dig in the earth, pick up bugs and bits of gravel, and be sheltered while doing their work.

We were walking down the long house together and the hens were fluttering and running from us—or, rather, from me, for they were not slow to recognize the presence of a stranger.

"The more you call them the more scared they are," the boy said. "If you just go along quietly they won't be half as apt to notice you."

There it was again! New men, new ways, new methods are disturbing factors. All changes need to be gradually introduced. All frights are followed by a dropping off of eggs.

We had left the main building and were over at the smaller house where 200 or 300 baby chicks were getting a start. It was getting along toward evening and the little white fellows were all huddled up close to the brooder stove.

"Looks as if they felt cold," my boy said, making a dive to look at the thermometer. "Down to 58! That won't do. If the fire should get much lower there would be a lot of goners."

Here was the last lesson of the day, and the first one in the book of success with chicks.

A GOOD THING

When It Comes Along Don't Let It Get Away From You.

"I really feel that it is hardly possible to say too much in favor of Grape-Nuts as a health food," writes a Chicago woman.

"For 9 or 10 years I had suffered from indigestion and chronic constipation, caused by the continued use of coffee and rich, heavy foods. My ailments made my life so wretched that I was eager to try anything that held out a promise of help. And that is how I happened to buy a package of Grape-Nuts food last spring.

"That ended my experiments. For in Grape-Nuts I found exactly what I wanted and needed. From the day I began to use it I noticed an improvement and in a very few weeks I found my health was being restored.

"My digestive apparatus now works perfectly and chronic constipation has been entirely relieved. I have gained in weight materially, and life is a very pleasant thing to me so long as I use Grape-Nuts once or twice a day. I have found by experiment that if I leave it off for a few days my health suffers.

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A Two-Dollar Bill

What Pokey and Dad Did Before the Fourth

By ABBIE F. RANSOM

"Eggs are good for her," remarked Dad, "specially now she's layin' or gettin' ready to"

UP THE stairs, three at a time—a run, skip, and jump landed him on the open window sill. He paused here a moment to survey the atmosphere, and then, gripping the sill with his hands, dropped to the roof of the lean-to behind the kitchen. Safely established at the favorite rendezvous, his gray eyes narrowed, freckled nose wrinkled, and, fingers in mouth, he sent a peremptory summons toward the stone house hidden by the orchard beyond the meadow. Three blasts, each more rasping than the first, brought another boy to the orchard fence.

"Be there in three jerks of a lamb's tail!" he screamed. "Wait just a minute!"

"What y' got to do, Pokey?" Dad yelled back, but the boy had disappeared, and soon another prolonged whistle relieved the pent-up impatience.

"I'm a-comin'." Pokey was switching up the road, a milk pan balanced on his head while his bare feet cycloned the dust. Dad observed him for an instant, seated himself contentedly, and whistled a tame crow, feeding it with cake crumbs from his pocket until Pokey demanded his attention in the grass-covered path by the kitchen door.

"Here's a pan of wax beans for your ma, 'n she ain't in the kitchen."

"She's gone to Taylorsville," Dad explained in a six-mule-team voice. "Set 'em down anywhere 'n come up. What y' so slow for?"

Pokey ran up the cherry tree growing beside the lean-to and tumbled to the roof.

"I got a cold boiled egg for Jeff." Pokey dived into his blouse. "Grandma said she might have it."

He peeled it skilfully, the crow, perched on his shoulder, picking at the white as the shell was removed. Dad looked on, remarking with satisfaction:

"Eggs are good for her, specially now she's layin' or gettin' ready to. She's building a nest in the Ben Davis apple tree," conveying the intelligence much as one would speak of ownership in a bonanza gold mine.

"If she gets some baby crows, give me one when they're big 'nough, won't you, Dad?"

"Sure," Dad responded, lying on his back. The egg was eaten, even the shell, and the crow betook herself to home-building. "D'y' know the Fourth is week after next?" he demanded.

Pokey nodded sadly. "I ain't got a cent," he confessed. "I had 'most four dollars, and Grandma made me put it in the bank. She said I'd waste it, and she don't b'lieve in boys spending money on the Fourth."

"Pa won't let me spend what folks give me." Dad's sympathy was always ready. "He says I've got to keep that till I'm twenty-one, but I can do as I please with what I earn." He sprang up, jumped through the window, and soon returned, hugging a thread box.

"I got two dollars and twenty-nine cents." Turning the box upside down, he shook off the cover and displayed to Pokey's admiring eyes a crisp two-dollar bill and some small change. "I earned every cent of this myself, 'n I'm going to spend it in skyrockets, 'n Roman candles, 'n serpents, 'n cannons, 'n nigger chasers, 'n air guns, 'n torpedoes, 'n—"

Pokey's deep-drawn sigh cut short the enumeration. He reached over and picked up the greenback, clasping it against his cheek, the better to sense is possibilities.

"Why, your're rich, Dad," he cried, "rich as—as Grandma's buttermilk before she puts water in it for the calves."

Dad laid the box carefully above them on the roof; they sprawled on their stomachs the better to feast their eyes; they spread the bill in the box and heaped the silver upon it, handling it tenderly, smoothing it, counting it, laying it in rows, and then heaping it up again. Finally, lest its contents should dissolve if excluded from the sunlight, they piled it in the box, left the cover off, and mothering above it they discussed the glory possible if ever so little more might be added to their wealth.

"I tell you what,"—a flash of inspiration jerked Dad to his feet,—"let's go and ask old man Buskirk if he don't want us to pick his early cherries. Ma sent me up there yesterday for some currants, 'n they're riper'n dandelion heads. He likes you. I heard him tell Pa he did, 'n maybe he'll let us pick if we promise not to eat a single one, even if they're wormy."

HE WAS halfway down the tree before he finished, Pokey but a branch behind. Up the road they steamed, a whirlwind of dust and sand. Old man Buskirk was aroused from his weeding by the sight of two timid, perspiring boys.

"Please, Mr. Buskirk, may I, may we—"

"Don't you want us to if we promise not to eat a single one?" Pokey chimed in, grinding his forehead with a sandy shirt sleeve.

The old man glanced humorously at them.

"Yes, take holt and weed," he ordered. "My back's 'most broke and the pesky onions ain't harf did."

"It ain't onions," Dad explained courageously. "We want to pick your cherries."

"'N we won't eat a single one," Pokey maintained, "'cause we want some skyrocket money."

Buskirk's brown eyes sparkled under his heavy brows, remembering his own Fourth of July beggary.

"You think I'll believe that'll keep you from breaking down my trees and eating me outen house and home?" he exploded. "The cherries ain't ready yet, and these onions are jest spiling to be did."

Inspiration came to Pokey but seldom, now it paid a long-deferred visit and brought relief.

"If we weed the onions, may we pick the cherries when they are ripe?" he urged.

A slow, tantalizing gaze held them until Dad squirmed and Pokey had recourse to his sleeve.

"I s'pose I've got to have somebody." The decision came when Dad's hope was utterly gone and Pokey's sleeve had all but worn through the dirt on his forehead. "Boys is all alike, and I might just as well take you. Let me see you finish this row, and if you don't spile too many onions I'll pay you ten cents an hour for all you do. But mind," he added, "I know just how much you orter do, and if it ain't done, why, your wages'll be cut."

"Ten cents an hour!" Pokey's breath flew skyward, and Dad made mental calculation according to the rule of desire, but a vision of the thread box on the roof tumbled before his arithmetical eyes and cooled his enthusiasm until reassurance came.

"There won't nobody see it there," he argued. "Ma's gone, but it'll be all right."

AN HOUR later the call of a bell came over the fields.

"That's Grandma," Pokey spoke regretfully. "If we'd a-told her I was goin' to work she wouldn't have called me, but now I've got to go, Mr. Buskirk."

"Come back if she don't need you," Buskirk admonished. "You're doing pretty well, and the onions must be weeded or they won't amount to shucks."

Two hours later Dad walked slowly home alone, nursing an aching back and smarting fingers. His first thought was for the thread box, and he climbed the cherry tree with eager haste. Someone had placed it on the window sill. Within it was the silver, but the two-dollar bill was gone. He searched the cracks, the ground, in the branches of the tree; tears fogged his eyes, but he hunted on. Pokey called from the orchard fence. The boy's voice was not natural.

"I've had to help Grandma with the ducks," he yelled, "but I thought about your money 'n scooted over 'n put the box on the window sill. I couldn't find the two dollars, 'n the pennies were scattered all over."

"I can't find it nuther," Dad shouted as a sickening fear gripped him. Pokey had been there, had put the box on the sill, and he—? The question would not frame into words. Flat upon the roof he flung himself, sobbing. He clenched his hands and rolled over and over, trying to smother his grief lest his mother at work in the kitchen should hear. Finally he sat upright and tried to read the riddle in the red clouds above the apple trees. The tears dried in dirty streaks across his temples, and his weed-stained fingers smirched impressionistic pictures on his cheeks, but while he sat there the tension relaxed, his face grew stern as manhood and settled in determined lines.

"Poor little kid!" he murmured. "He shouldn't ought to have done it, but I s'pose he couldn't help it. His folks are all dead, 'n grandmas ain't s'posed to treat a feller like he'd orter be. I won't tell on him."

Savory smells and clattery sounds informed him that supper was well under way. He slid from the roof by the cherry-tree route and scudded toward the stone house, shrieking like a locomotive. Pokey responded from the chicken house, met him by the fence, and greeted him with, "Did you find it, Dad?"

A shake of the head answered.

"I don't see how it could 'a' got lost," Pokey continued anxiously. "It was in the bottom of the box with the rest piled atop, 'n if a tramp had seen it, why didn't he take it all?"

"There's just a dime and two nickels 'n nine cents left," Dad returned sorrowfully. "That won't buy much Fourth of July."

UP IN the morning doing chores at home, hours of hard work at the Buskirk farm, and then chores again—it was a round of duties which left no time for speculation and none for play or Fourth of July planning. Two days before that momentous holiday the last onion had been weeded, the final cherry picked, and old man Buskirk, whom the boys regarded as the "meanest old codger in the township," laid a five-dollar bill in each grimy hand.

"You've earnt 'em," was his hearty declaration. "You didn't shirk a mite, nor eat my cherries, nor break my trees. That's for your work, and here's"—he dived into his overalls—"here's a half-dollar apiece for behaving yourselves." Without the waste of an instant he plunged into the barn to escape thanks, pulling the door behind him.

Dad stared at Pokey, Pokey's eyes were bulging at him, and both clutched tight the biggest amount of money either had ever owned. Then with a resounding whoop, a hurrah for their employer and benefactor, a shriek and a bound, they raced for the lean-to roof. There they counted and recounted, "A five-dollar bill, two five-dollar bills, fifty cents, another fifty cents, a dime, two nickels, and nine pennies."

Dad broke the ecstatic reckoning.

"I just 'most wish we didn't have to spend this money for fireworks. It was Jiminy crickets hard work to earn it."

"If we hadn't lost that two dollars," Pokey began, but a glance from Dad restrained him.

"S'pose we just spend the half-dollars," he substituted. "There's the picnic, 'n there's goin' to be fireworks 'n ice cream, 'n say, Dad, don't you think it's 'most time Jeff had some baby crows?"

Dad sprang up, slipping his money into his overalls.

"I ain't so much as thought of Jeff for more'n a week," he exclaimed. "Let's shin up the tree 'n see how many eggs she's got."

He beat Pokey to the orchard. Only one could climb to the top of the tree where the crow had pre-empted space for a summer home, and this privilege he claimed. Soon his breath came in short, quick spasms, his eyes glowed while his heart warmed toward the one he had suspected of betraying him.

"Pokey, Pokey," he gasped, "there ain't but one egg, but—but—" his fingers tore frantically at the nest.

"But what?" came the demand as Pokey crowded along the limb.

"My money! It was Jeff. She stole it. I got it, 'n only made a little bit of a hole in the nest, 'n the money ain't hurt either. See?"

Safe in the crotch Dad smoothed out the crinkled greenback while Jeff circled cawing above their heads, settling at last on Pokey's shoulder to pick hungrily at the money which was being recounted for probably the fortieth time. The supper bell sounded simultaneously from the stone house and the one with the lean-to, and the boys rose to answer.

"We can save our five-dollar bills 'n just spend the rest." Dad reached this decision after deliberate calculation. "Pa's promised to take us to Taylorsville to-morrow so's we can buy our skyrockets, and you want to wake early."

"Sure," Pokey responded as they broke into a run, each in his own direction; but as Pokey vaulted the fence a shout from Dad caused him to turn.

"So long, Pokey!" A new note of friendship winging the words and lending them music. In it was a cry for forgiveness, but Pokey, innocent of wrong, caught nothing but the joyous good night of a chum, and answered with a happy:

"See you in the mornin'!"

"Pokey, Pokey," he gasped, "there ain't but one egg, but—but—" "But what?" came the demand as Pokey crowded along the limb

For the Woman's Eye

A Country Road at Sunset

By Florence Jones Hadley

LOW on the hills the sunset's last glow lingers
As if the dear, glad day had turned once more
To smile good-by to those who watch her slipping,
A tired child, through night's half-open door.

And as we watch, the long, gray shadows gather,
Blotting the far horizon from our sight;
Woodlands grow dim until they melt and mingle
With that old mystery—the blessed night.

Beyond the hedge that lies in deeper shadow
The fireflies rise and fall, and, homeward bound,
The happy martins call, sweet-voiced, insistent,
For home is home wherever love is found.

O blessed dusk, the hour of sweet forgetting,
When all the little cares that vexed our day
Dissolve and mingle with those other shadows,
Leaving but peace and hope—and love alway.

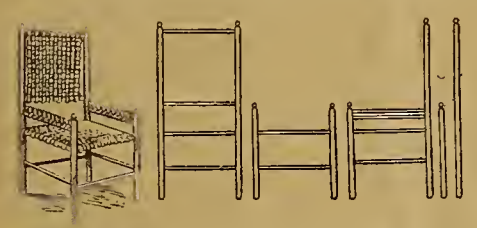
The Boy's Armchair

By Charles McCoy

THE supply of comfortable chairs always seems to fall short before the boy's room is reached. Here is an armchair which a boy in my family made for himself.

The tools needed are hand saw, plane, inch auger, and mallet. If you buy the wood already planed and cut, the inch auger and mallet are enough.

The necessary materials are hard wood, which must be cut into: Two pieces 3 feet by 2 inches by 2 inches for



the back uprights; 2 pieces 2 feet by 2 inches by 2 inches for the front uprights; 14 pieces 18 inches long by 1 inch in diameter (rounded), and two pounds of fine rope or cord for lacing the back, seat, and sides.

Bore your back uprights on the sides facing each other in four places, viz., (1) 2 inches from top, (2) 14 inches lower, (3) 4 inches lower, (4) 8 inches lower. They are then ready to be runged together. Now bore them on the front sides, (1) 22 inches from top, (2) 2 inches lower, (3) 5 inches lower, and (4) 8 inches lower. They are then ready for attaching to the front uprights.

Bore the front uprights facing each other 8 inches from the top, and then on the sides facing backs, (1) 1 inch from top, (2) 2 inches lower, (3) 5 inches lower, and (4) 8 inches lower.

Rung together. If holes are diametrically opposite there is no room for mistakes, as the construction is simplicity itself. Lace the back, sides, and seat with rope. Cushions and cover may be added if desired.

Hints for Selecting China

By Edith C. Salisbury

GOOD china adds enjoyment even to the best-cooked meals. Modest colors and small designs give greater satisfaction than glaring tones and large, sprawling patterns. When one set of dishes is to be used three times a day, week after week, it is specially important to select a color and pattern which are so quiet that one comes to enjoy them almost without noticing them.

Conventionalized patterns are always better than realistic ones, for the simple reason that you don't want to eat off of real roses and peonies that smell of the garden; flowers were not intended to be eaten from. On the other hand, their lines and colors may inspire a very pleasant design in which the blossoms are suggested, but so flattened and altered either in color or arrangement as to be not a lifelike picture of flowers but an appropriate pattern.

E

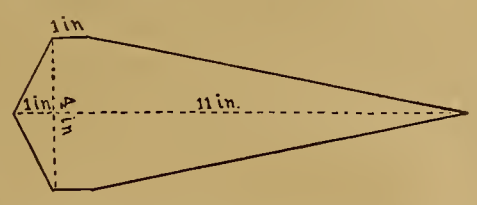
Blue and white Canton china is always lovely. The creamy-white china decorated with a simple gold band is also attractive, but as ordinary gilt soon wears off, only pure gold leaf can be depended upon for durability.

In buying china for ordinary use it is well to select open stock, as then pieces can be replaced when they are broken. Cracked or chipped china is always an eyesore, and is never used on the carefully set table. Care in handling china is a matter of habit, and people can be trained to wash and wipe dishes without breaking them, as well as they can be trained to do anything else properly.

Wall-Paper Portières

By Louise E. Dew

HOME-MADE wall-paper portières look very much like imported reed portières, and they are very durable. They are so easy to make that patience rather than skill is needed, and patience only because it takes a great many paper beads to make a full-sized curtain.



All designs and all colors of wall paper may be used, and these may be combined in one portière; or some special color scheme may be carried out by keeping to one general tone. Left-over wall papers or an old sample book will furnish ample material. It makes no difference what way of the grain the pattern is laid. Wall paper of the thinner grades makes a better, because a less clumsy, bead than the heavy oatmeal and ingrain grades.

The accompanying diagram shows the shape to which the paper must be cut. As will be seen, the pattern is something like a kite in form, twelve inches long and four inches broad at the widest part. Use a straight, strong knitting needle or hatpin to twist it on, rolling the shaped piece of paper tightly upon this, beginning with the blunt angle. If the rolling is done solidly and evenly, the paper will form a tapering cylinder, largest in the middle. The roll must be held firmly and a little glue brushed on the wrong side of the sharp tip of the paper, which is then pressed down and held until it is dry and holds the roll tight. The needle may then be withdrawn and the bead is finished. The glue used should be reliable, otherwise the point will detach itself and the bead becomes merely a loose curl of paper.

These long paper beads are strung together on cords, just as the lengths of reed are strung, and they are separated by one or more glass beads in the same manner. The diagram of the finished bead illustrates one method of stringing them on a double cord which gives a pretty result. A little loop of glass beads should finish the end of the cord at the bottom.

The spiral edges of the rolled paper, shown distinctly in the picture to indicate how the bead is twisted, are hardly visible on the real bead.

Clear crystal, gold, or silver beads are most effective in combination with the paper, but any kind may be used. The finished strings are mounted at the top on a strip of heavy lace or wide furniture gimp, as long as the width of the door.

This is pleasant work for the evening, as it can be done a little at a time and does not cause strain to the eyes. If a full-length portière seems too much of an undertaking, a short lambrequin to hang above a doorway or high window is very effective, and requires only a short time to make.

The life of the paper portière is quite as long as that of the reed or any other, as the beads are practically indestructible when rolled according to the diagram.

A pair may be sold for ten dollars.

The Clean Cabinet

THERE is only one class of housekeepers who should not be entrusted with a kitchen cabinet, and it includes those who cannot lift a cupful of sugar or flour without spilling a little; those who tip over the spice cans and sprinkle cinnamon and nutmeg on the shelf, just where they will attract ants and other insects.

If a cabinet is not kept clean it can cause endless worry and work.

Using Green Peas

PEAS, to be at their best, should be eaten when barely grown, as their flavor is much better than when older. They should be cooked the same day that they are gathered, as they lose in flavor and nutrition by standing. Like asparagus, they should always be put to cook in boiling water (never in cold), using barely enough to cover, and cooked from twenty to thirty minutes, and removed from the fire as soon as tender, as long cooking spoils the flavor and renders them less digestible.

Creamed Peas—Shell, add boiling water to barely cover, cover the vessel closely, and cook twenty minutes, or until tender, adding salt and pepper to season when half done. Smooth a level tablespoonful of flour in a half cupful of rich sweet milk and pour slowly into the peas, stirring constantly so it will not lump, cook a minute longer, remove from the fire, add a spoonful or two of cream and a small lump of butter; stir until melted and serve at once.

Green Pea Soufflé—Mash a quart of cooked peas, season highly with salt and pepper, add two tablespoonfuls of butter, a pint of milk, and the well-beaten yolks of three eggs. Then fold in the stiffly beaten whites of the eggs, turn into a buttered pudding dish, bake twenty minutes, uncover, and brown. Serve at once—before it falls—in same dish as baked in.

Pea Salad—Cook a pint of peas in as little boiling water as possible. Drain, and when cold add the finely chopped yolks of two hard-boiled eggs, a very little very finely minced onion (merely enough to flavor), two tablespoonfuls of grated or finely chopped cheese, and salad dressing to moisten.

Green Peas and Carrots—Scrape carrots, cut in dice, and cook in a very little salted boiling water until tender. Drain, and add twice the quantity of creamed peas. Serve hot. This is as attractive to the eye as to the palate.

Other Recipes

Potato Dumplings—Scrape small new potatoes and stew with a small piece of meat. When done, drop in dumplings made of one cupful of flour to which has been added one teaspoonful of baking powder and one teaspoonful of salt, with enough sweet milk added to make a stiff batter. Add one cupful of sweet milk and a little butter, and cook fifteen minutes longer, without raising the cover, in order that the dumplings may be light.

A "Different" Pieplant Pie — To be baked in one crust. Fill the crust with the tender stalks cut as for stewing. Sprinkle with one-half cupful of sugar mixed with two heaping tablespoonfuls of flour, and fill pie with cream, one-half to three-fourths cupful. Bake as usual. This is best when used the same day it is baked.

Cherry Hint—Sour cherries are much better if canned with pineapple, in the proportion of one pineapple to a two-quart jar. It changes the acid so that not nearly as much sugar is needed, besides giving a delicious flavor to the cherries. Pineapples are also fine if added to sweet cherries in preserving.

Cherry Pickle—Seven pounds of pitted cherries, three and one-half pounds of sugar, two ounces of cinnamon, one ounce of cloves, one-half pint of vinegar. Drain the cherries, heat the vinegar, sugar and spices, and pour over the cold cherries. Drain off the juice and heat it for three days in succession, then heat all together and seal.

Why Bread is Stringy

Query: I have had trouble with bread getting stringy or ropy in hot weather, even when well baked. What is the reason for this, and how can it be prevented?

MRS. A. KELLOGG, Pennsylvania.

Answer: When bread is allowed to rise too long the yeast plants develop to a stage that makes a chemical change in the flour. This produces the ropy or stringy defect of which our correspondent speaks. The remedy is to cut down the time allowed for rising, and to make the loaves smaller, so that they will more quickly become heated entirely through in the oven. Sometimes the loaves are made so large that the center is not entirely sterilized, and the yeast continues to develop even after the bread is baked.

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Baby's Eyes Need Care

One Third the Blindness Begins Shortly After Birth

By F. A. HARTLEY, M. D.

YOU should know how to take care of the baby's eyes. The best time to begin is at birth. After the first bath his eyes should be cleansed with sterile water and absorbent cotton. By sterile water we mean water that has been boiled until all organisms that might cause infection are destroyed. Absorbent cotton is cotton such as is used by doctors in their practice. It may be secured at a drug store in a tightly sealed package with a guarantee that it is sterile. The boiled water should be cooled to about body temperature, then a ball of the cotton dipped into it. The lids of baby's eyes should be gently separated and the contents of the cotton sponge be carefully squeezed into them to wash away any mucous or other foreign substance that may have gotten into them.

One third of all the blindness in this country has been caused by an inflammation of the eyes during the first month following birth. This inflammation is caused by infection that gets into the eyes at birth or within a few days afterward by careless attention to the eyes, such as dirty fingers or the use of dirty cotton and of water that has not been boiled before using.

The Treatment is Harmless

ALMOST every case of blindness due to inflammation of the eyes of the newborn might be prevented absolutely by the following simple and harmless treatment: Ask your physician to put the medicine in your baby's eyes that prevents the disease that causes them to go blind. He will only be too glad to do so, and will place in each eye one drop of a two-per-cent silver solution that will almost surely prevent this dreadful disease. The treatment is harmless and effective, and will scarcely be felt by the baby. If you have neglected to have this preventive treatment used and your baby is attacked with sore eyes, never attempt to treat it with home remedies, such as scraped potato, raw meat, rotten apple, or tea leaves. Such things never do any good and often do much harm. Call your family physician and he will give you treatment that will be much more effective than any home remedies you or your neighbors may know about.

When your child is old enough to play with blocks or look at pictures and books, and brings things up close to his eyes, you will notice that both eyes remain steadily fixed on the object at which he is looking, provided both eyes are normal. If one eye wanders past or away from the point looked at, the child is cross-eyed. The eye that fails to fix on the point is the affected one. The vision in the crossed eye is poor. The child does not get a clear image of the object looked at, so the affected eye turns because it sees poorly and the child depends entirely upon the good-seeing eye.

What shall be done for the child with cross-eyes? We know that if a child's arm were tied up for a long time so that he could not use it the arm would be useless even after the bandage were removed. It is so with the eye. The poor-seeing eye becomes more and more useless by disuse. Evidently the remedy then is to improve the vision in the poor-seeing eye before it becomes blind and useless from lack of proper use.

How to Correct Cross-Eyes

MANY of these cases of cross-eyes are completely cured by wearing a pair of perfectly fitted correcting glasses which restore the vision to normal in the poor-seeing eye. To be of any value the glasses must be fitted early. Do not make the mistake of waiting until the child starts to school to have this done. It will usually then be too late for glasses to do much good. The eye will have become practically blind from disuse, and the muscles that pull it out of position will have become so strong that they can no longer be corrected by wearing glasses.

When you notice that your child's eyes have a tendency to cross, go to your family physician and tell him about it. If he does not treat the eyes, ask him to direct you to a good, competent physician who does. It is important for the good of your child that you do this, for no more difficult nor painstaking task falls to the lot of the trained physician than that of properly fitting children with glasses whether they be cross-eyed or not.

An operation for straightening the eyes should not be thought of until all other means have failed, and not then unless advised by a thoroughly competent physician.

When your child is old enough to read you should select books that are printed on cream-colored paper rather than brilliant white paper with a glossy finish. Those printed on glossy white paper dazzle the eyes because this paper reflects the light. Consequently the eyes soon tire from the excess if illumination. The type should be English characters, clear in outline and sufficiently large to be easily read at the proper distance.

Germans Are Near-Sighted

MYOPIA, or near-sightedness, is very prevalent among Germans. One chief reason for this is the bad German script in which their schoolbooks used to be printed. To-day many of the German books are printed in English type.

The light for reading, whether artificial or daylight, should not be so brilliant that it dazzles, nor, on the other hand, so dim that the print is rendered indistinct. The light should fall over the left shoulder of the reader, squarely on the page, so as not to cast a shadow or cause dazzling. Light from any other direction than back of the reader is liable to be too dim or too brilliant, or make the reader sit in a cramped position, all of which are very harmful to the growing child.

There is a very serious inflammatory disease of the eyes called trachoma. It is essentially chronic in character, often lasting many years in spite of careful treatment. It frequently so impairs the vision of the patient that he is unable to follow any occupation, and many are rendered blind by it. This disease is very contagious and is communicated from one person to another by using the same towels, bed linen, wash bowls, and toilet articles that have been contaminated by persons suffering from the disease. This disease is so serious that our Government refuses admission to all immigrants who come here suffering from it. They are returned to the country from which they came at the expense of the steamship company which brought them over. Because of this prohibition trachoma is becoming less common in our country.

Occasionally one of these chronic trachoma cases undergoes an acute, active, inflammatory change in which there is a marked increase in all the symptoms, and especially an abundant secretion from the eyes. One case in school may be sufficient to start an epidemic among all the other children. In this way we can account for every epidemic of sore eyes that we find in children's homes and public boarding houses. One person has the disease; he uses the same towels, the same wash bowls and toilet articles that the others do, and presently they all have the same disease.

Towels Spread Disease

TO AVOID contagious diseases of the eye, provide your child with his own towel and toilet articles, and never allow him to use those used by anyone else. Even the mildest cases of trachoma last for months despite the most careful treatment, while the severe cases drag on for years, making their victims miserable, half-blind, and often subjects of charity because this dreadful malady unfits them for work. Many people think that granulated lids is a mild inflammation of the eyes that lasts only a few days and gets well without any special attention. So we want to impress upon you that few greater calamities could befall you or your child than to become the victim of true granulated lids, or trachoma.

You should know whether or not your child needs glasses. We can tell you only a few of the indications that he is suffering for want of them. The two most prominent are headache and poor vision. The headache usually comes on after the eyes have been used for some time for near work. The pain is seated in the region of the eyes, the forehead, and back of the neck. If the child is in school, he comes home cross and nervous. He tells you his head aches. He may also add that he was sick at the stomach in school. A few hours' rest and a good night's sleep restore him quite to normal again.

He goes back to school next day to return home at night complaining of the same nervous symptoms and headache as the evening before.

The child who habitually has the headache at school, but is free from it at home on Saturday and Sunday, needs glasses. The child who has headache from eye-strain soon discovers that he avoids the discomfort if he does not use his eyes, and he uses them as little as possible for work and becomes an idler, not because he is lazy but for the sake of comfort. He takes no pleasure in study, and often plays hooky to get away from school and its tortures. When he is compelled to attend he often falls into a state of antagonism to teachers, schoolmates, and everything connected with the school.

He becomes a bad boy because he is misunderstood. He has been telling you plainly as possible that he is suffering from eye-strain.

Give such a child the proper glasses for his eyes and you will see his antagonism to teachers and school quickly pass away. Instead of being an idler and dunce with an expression of "I don't care," you will find him developing into a thoughtful, docile boy, with a love for study quite different from his former attitude.

He loves to study now because he is comfortable. His active young mind takes pleasure now in exploring the secrets and knowledge that may be found in books. He soon takes his rightful place in his class, for these boys are not dullards by any means. They are not lazy nor bad boys, but their whole nervous system rebels at the burden and torture of study before their eye-strain is corrected.

Glasses Remedy Eye-Strain

IF A child suffering from eye-strain of the type just considered were asked to read the test card at the usual distance, it is probable he would do so, even to the last line, without mistake. Now the child's ability to read the last line on the test card at the proper distance without error is no evidence that there is no strain. Headache, either in the front or back of the head, coming on after near work, even though the patient can read the last line on the test card or the finest print at the proper reading distance, is stronger evidence of eye-strain and the need of glasses than if he were unable to see a single letter on the test card at the usual distance.

Children who do not see well at a distance and have to be given places on the front seats to get their work from the blackboard do not, as a rule, suffer so much from headache. This is particularly true of near-sighted children, as they seldom or never complain of headache.

Yet they need glasses quite as much as though they were suffering from the nervous symptoms of eye-strain. If your child is near-sighted and you have provided him with glasses, do not imagine you have discharged your whole duty to him. He is suffering from what might be termed "sick eyes." There is a tendency for the eyeballs to stretch and elongate, and in so doing cause a pull on the delicate membranes in the interior of the eye, setting up inflammatory or other changes that may destroy the vision. These changes are especially liable to follow long and exhausting sickness or any of the diseases common to childhood, such as measles, whooping cough, scarlet fever, and diphtheria, or any abuse or overuse of the eye.

As a matter of precaution you should take your child, if he is near-sighted, once or twice a year to a competent doctor in diseases of the eye and have him look into the eyes to see if any changes are taking place. Many times nothing will need to be done, for the condition has become stationary; but should there be a change, by prompt recognition and appropriate treatment you will perhaps save him from blindness and allow him to fulfill his mission in life.

Consult a Good Oculist

OF THE other children who suffer from poor vision, but who are not near-sighted, many suffer from headache and the other nervous symptoms of eye-strain; but their suffering is not usually so acute as those who are able to read the test card almost perfectly. These children need glasses, but that is only part of their treatment. Often they have some diseased condition of the interior of the eye that demands medical treatment as well as glasses. Now when it comes to the matter of providing glasses for your child, it is well to consult someone who is competent not only to fit him accurately but at the same time to treat any disease that may be present.

A Girl You Would Like

By Jessie Field

"TWO years ago, for the industrial exhibit, I made a tea towel and got fourth prize on it," writes Berenice Falk, who is eight years old. "Last year Mamma said I must try to win first prize, so I took a nice bleached flour sack and drew a thread to straighten it. Then Mamma showed me how to baste the hem. I began hemming. I used a small needle and No. 60 thread. Mamma said for me to pick up one thread of the goods at a time. At first it was very hard for me. I had to rip what I sewed. I did not like to do that, so I thought I'd better do as Mamma said. I brought my tea towel to school and worked on it. I finished it in two weeks. Then I washed and ironed it.

"Then I began making a crib quilt, two and a half by three feet. Mamma bought plain red calico and white with a little red dot for my quilt. I made it four-patch. I had to take very small even stitches. It took me seven weeks. I sewed at school and evenings at home, I pressed it neatly on the wrong side.

"Then Mamma bought a half-yard of checked blue-and-white French gingham, 25 cents a yard. And she bought two and a half yards of blue-and-white finishing edge. This was for my sewing apron. I made a little round pincushion and a needle book out of white outing flannel, buttonholed around the edge in blue. Then I took my little blue emery bag, my scissors, thimble, tape measure, and stiletto, and tied them with ribbon the color of the blue in my apron, and sewed it to the right side of my apron belt. It took me a week to make this apron, sewing part of the afternoons at school and evenings at home. I was very happy when I won first prizes on my work, for I worked very hard."

This wonderful little girl belongs to Page County, Iowa. For several years there has been held there a boys' and girls' corn show and industrial exhibit, and thousands of country girls have had a part in it. In this there has been a splendid spirit of co-operation between mothers and teachers. Some of the work has been done in the home and some in the schools.

It is well to teach our farm boys how to grow more corn to the acre and how to raise better stock, in order to secure more money. But what is the use of having more money if we do not use it in making better homes in the country? And how can we make better homes unless we train the girls for it?

Perhaps it is natural that the purely economic phases of country development should be taken up first, but the real heart of the problem is in the homes; and those places in the United States where this is recognized, and there are bread-baking, butter-judging, and sewing contests for the girls as well as corn-growing and stock-judging contests for the boys, will find that the future proves their wisdom.

THE Oklahoma Aggie girls are given a course in millinery. They say that hats which cost from six to eight dollars in the shops can be made at home for from $2.50 to $3. And after the home milliner has accumulated a chestful of old hats and other fal-lals she can make new hats from old for still less.

THREE things make the foundation of a good farm garden—green corn for the table from several plantings for late and early roasting ears; green peas planted on the same general plan; and new potatoes as soon as they can grow after the spring opens. Of course there must be lettuce, radishes, onions, and string beans, but every forehanded family has them.

E

Underwear for the Little Girl

Which Can be Made by Mother With the Aid of Miss Gould's Dressmaking Lesson

SO MUCH money can be saved by making underwear for the children instead of buying it ready-made that I am sure every mother will be interested in the set shown on this page. It can be very inexpensively made of good cambric and trimmed with linen lace which wears so well. It can also be made of long cloth if a thinner material is desired; and, if washing and ironing is a consideration, it can be made of cotton crêpe.

I am going to tell you how this set of underwear is put together, and then with the aid of this dressmaking lesson and the patterns I am sure you will have no trouble in making it.

First of all, I want to tell you to follow most carefully all of the directions given on the pattern envelope for cutting, marking seam allowances, hems, and so forth. For the actual making you can use the following directions:

To Make the Underwaist—Join shoulder and underarm seams; the French fell or seam is best to use for underwear. In the French fell the seams are sewn up on the right side about an eighth of an inch outside of the indicated seam allowance; the material is cut away close to this line of stitching, the seam turned, creased, and stitched again on the wrong side along the line marked for the seam allowance.

Neck and armholes of the underwaist may be finished, as illustrated, with the lace edging, or may be faced with a narrow bias facing. The lower edge should be turned up and hemmed. Large-eyed, white bone buttons for buttoning on the drawers should be attached to the bottom of waist with tape. Close waist in back with small buttons.

To Make the Drawers—Join the inside curved leg seams, stitching them by machine or running them up securely by hand in a French seam. Join the side seams in the same way, and finish the side openings with a continuous finish. A straight strip of material about an inch wide may be used for this finish, sewing it on around the edges of the openings, turning it back, creasing through the center, and hemming it down over the seam on the wrong side.

There is an old-time finish for these openings that is good also, although not quite as easy to apply. A straight piece of material about two inches wide and about an inch longer than the opening is creased down the center and slashed to the depth of the opening. The lower ends are pointed or rounded. The edges of the slash are sewn to the edges of the openings from the right side; the facing is then turned back and its outer edges hemmed down neatly on the inside. The pointed or rounded ends act as stays for the seams, preventing them from tearing.

Turn up the hems allowed on the bottoms of the drawers. These hems may be stitched by machine, hemmed by hand, or a few threads drawn and hemstitched. The irregular briar- or feather-stitching illustrated is an unusually pretty finish if one has the time to do it.

To sew the lace to the lower edges of the drawers, draw up the thread in the upper edge of the lace, or gather it slightly along the top just enough to ease it a trifle, thus providing for any shrinkage in laundering, and whip it on lower edge of the hem by hand. By whipping is meant sewing it on from the right side with short, firm over-and-over stitches.

Another way of sewing lace edging to underwear is to make a tuck about a quarter of an inch wide, leaving an eighth of an inch allowance below the tuck; fold this allowance back on the wrong side until even with the edge of the tuck, and crease. Gather the lace slightly, turn back the tuck, baste the lace to the turned-in edge, and stitch. Bring the tuck down to cover the seam, and stitch, slip-stitch, or catch down with the briar-stitching along the lower edge of the tuck. When this finish is used for the lower edge of the drawers the hem may be omitted.

Gather the tops of the drawers as perforated on the pattern, stroke the gathers, and sew to the bands. These bands are made from straight pieces of material doubled. They should be seamed on from the right side, turned back, and hemmed down to cover the seams.

A buttonhole should be worked in each end of the band and one in the center of each band for attaching the drawers to the underwaist.

The Princesse Slip—Join seams with the French fells as directed for the drawers. The lower edge of the skirt may be finished with any of the finishes mentioned, or with the briar-stitching as illustrated; the edging is sewn on in the same way as directed for the drawers. It is more effective to have all of the set finished alike. Neck and armhole edges may be finished with a narrow bias facing or turned in a seam's allowance and hemmed. Whip the lace on and finish as desired.

The Nightgown—Finish the seams as directed for the other garments, and the hems in the same way also. The embroidery may be worked in mercerized linen or cotton floss.

It is a good idea when sewing up the underarm seams of the nightgown to stitch a line of tape in with the seam where it curves under the arm; this will prevent the seam from tearing out, which is apt to happen.

No. 2812—Girl's Set of Underwear Patterns—2 to 10 years. Material required for the entire set in 8-year size, seven yards of thirty-six-inch material. Price of this set of patterns, 20 cents.

How to Get the Set of Underwear Patterns Shown on This Page

ENCLOSE twenty cents in stamps or coin with the correct size and number of this pattern and your address, and send it to Pattern Department, FARM AND FIRESIDE, Springfield, Ohio.

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What to Put On Beds

By Edith C. Salisbury

WHAT is your idea of a really comfortable bed?

The first requisite, in my opinion, is a bedstead firm and strong, and springs that support the weight of the body evenly. There is nothing much more annoying than springs which drop you out one side of the bed or dump you into the middle of it. If I had my choice of springs I should certainly choose the box spring, with a mattress of medium weight on top. This is the most expensive spring, but it is the best. My second choice would be a woven-wire spring reinforced diagonally through the center and wide enough to come well over the frame.

There is a difference of opinion regarding mattresses, but probably most people prefer hair. A good felt mattress over a box spring is not to be despised, however. But don't allow anyone to persuade you to buy an excelsior mattress because it is cheap. I should rather have a good tick filled with clean straw or clover hay than excelsior, which is generally dusty and always harsh.

Too often there is a skimpiness about the bed linen that is annoying, to say the least. In some places—the State of Oklahoma is one of them—there is a law requiring all sheets to be fully three yards long, so that they will fold well over the blankets, which on public beds may not be free from disease germs. This length is also reasonable in private homes because it protects the blankets from soil.

Plain hems with embroidered monograms look and wear better on sheets than any trimming of lace and embroidery.

A pair of soft, fluffy blankets of almost pure wool are more comfortable than several quilts. Pillows should be flat and soft.

Such a bed guarantees for the easy conscience peaceful nights, which rest and refresh weary muscles and strained nerves.

SHE QUIT

But It Was a Hard Pull.

It is hard to believe that coffee will put a person in such a condition as it did an Ohio woman. She tells her own story:

"I did not believe coffee caused my trouble, and frequently said I liked it so well I would not, and could not, quit drinking it, but I was a miserable sufferer from heart trouble and nervous prostration for four years.

"I was scarcely able to be around, had no energy and did not care for anything. Was emaciated and had a constant pain around my heart until I thought I could not endure it.

"Frequently I had nervous chills and the least excitement would drive sleep away, and any little noise would upset me terribly. I was gradually getting worse until finally I asked myself what's the use of being sick all the time and buying medicine so that I could indulge myself in coffee?

"So I got some Postum to help me quit. I made it strictly according to directions and I want to tell you that change was the greatest step in my life. It was easy to quit coffee because I now like Postum better than the coffee.

"One by one of the old troubles left until now I am in splendid health, nerves steady, heart all right and the pain all gone. Never have any more nervous chills, don't take any medicine, can do all my house work and have done a great deal beside."

Name given by Postum Co., Battle Creek, Mich. Read "The Road to Wellville," in pkgs.

Postum comes in two forms:

Postum Cereal—the original form—must be well boiled. 15c and 25c packages.

Instant Postum—a soluble powder—dissolves quickly in a cup of hot water and, with cream and sugar, makes a delicious beverage **instantly.** 30c and 50c tins.

Both kinds are equally delicious and cost about the same per cup.

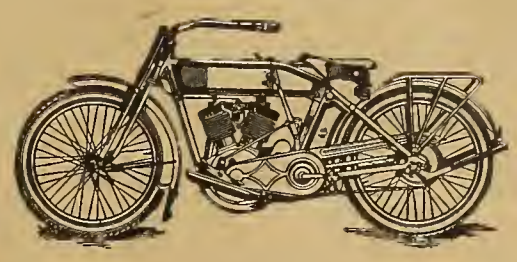
"There's a Reason" for Postum.

—sold by Grocers.

Look! THIS MOTORCYCLE GIVEN AWAY As a Prize

THAT'S just what we mean—given away as a prize. Our plan is easy and simple. Here's a chance to get a motorcycle with the least possible effort. Send us your name for our plan. You'll scarcely believe us when we tell you how easy it is to get this machine. An easy plan. No fake puzzles to work. If you will give us just a little of your spare time, you can have this machine; but be sure and

SEND YOUR NAME TODAY



This is a genuine twin-cylinder—two-speed, latest model "Indian" machine, the latest and last word in motorcycle making. The machine is a brand new 1915 model and will be shipped direct from the factory so as to insure that you get only the latest and best. Don't fail to send us your name. Our plan is to advertise our business, and if you will help us you can have the machine. It will not require a solid week of your time to get this machine worth $250.00. Isn't that worth a try? Where else can you earn a $250.00 motorcycle in a week? Be quick—that's the main thing—and address

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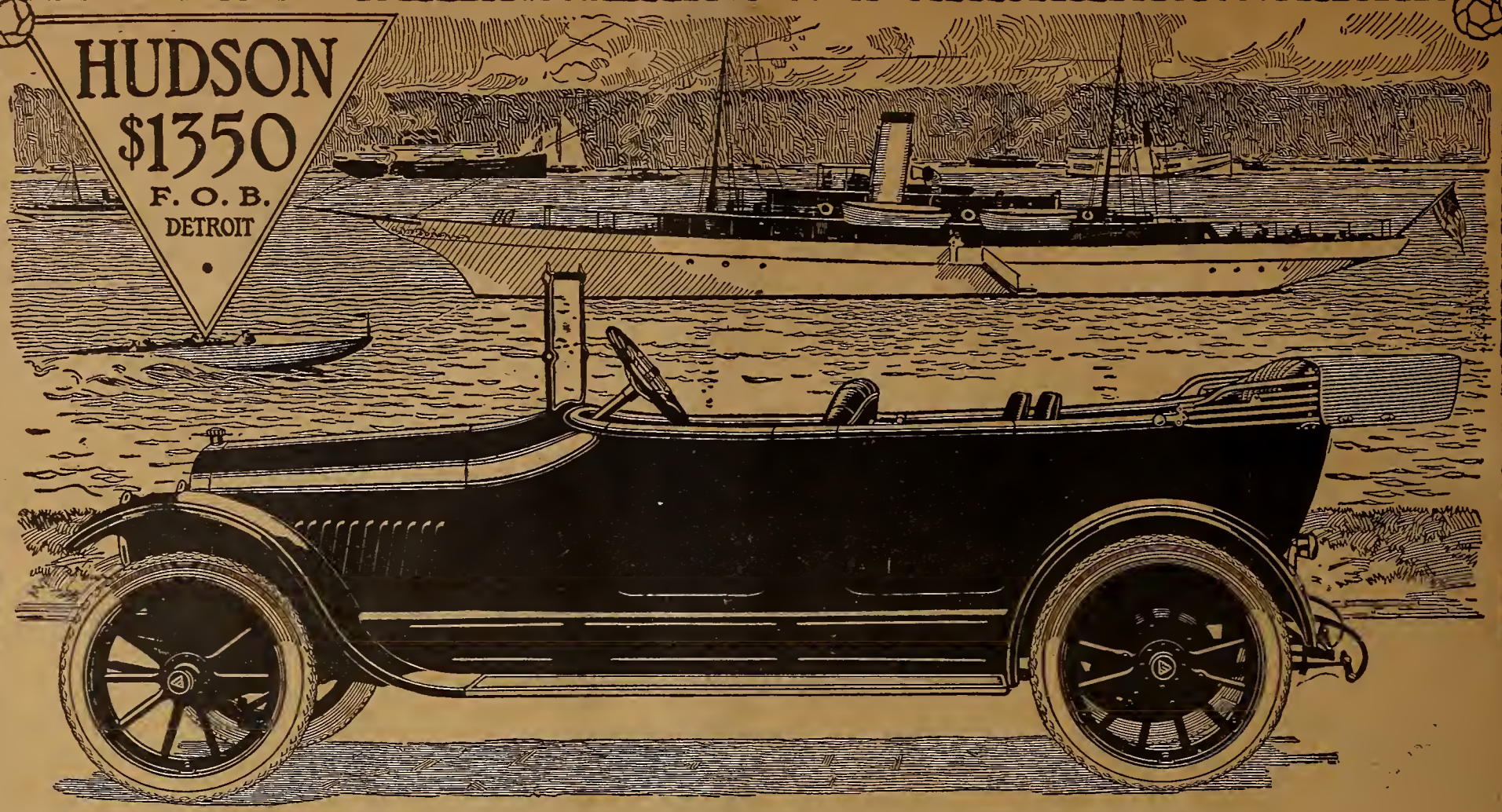

"The Road Cruiser"

Ready—the 1916 Hudson

This is to announce the 1916 HUDSON—the third model of this new-type HUDSON, which has become the most popular class car of the day.

It is 20 months since this new-type HUDSON came out at $1750. It weighed about one-third less than average old-time Sixes. It cut tire and fuel cost in two. It had ample power, ample room for seven. It has proved itself one of the staunchest cars ever built. Despite its low price, it excelled in many ways the costly cars of that day. Its lightness was due to better materials, better designing, to refinement in place of crudity.

This HUDSON became instantly popular. It took us one year to catch up with our orders. It forced us to treble our output. Repeatedly it attained a sale of a million dollars weekly.

In the past 20 months, 15,000 men have bought it. After two seasons with it they unite in pronouncing it the ideal modern car.

Now we announce improvements, in some respects the greatest HUDSON ever made. And one at least will be the most welcome innovation of the year—the new Ever-Lustre finish.

Now a $1350 Price

The first price on this new type was $1750. That was late in 1913. It startled Motordom. This was the first quality Six to sell under $2000, and many engineers said that price was impossible on a car of HUDSON quality. And they said our lightness—under 3000 pounds—was incompatible with strength.

Four Innovations

1—Yacht-Line Body
2—Ever-Lustre Finish
3—Roomier Tonneau
4—$200 Reduction

But the car was a HUDSON, and HUDSON standards are high. Howard E. Coffin was the designer, and he never had made a mistake. So men flocked to this car in such numbers that our next model, with 31 improvements, could be sold for $1550.

Now, with a trebled output, we offer another $200 reduction. And that on a new model, vastly improved. That means $400 reduction—23 per cent—since this new type first came out at a price pronounced impossible.

Yacht-Line Body

And now comes the Yacht-Line body, a seven-year evolution. From straight lines we came to streamline. Now come lines so graceful and unbroken that we call them Yacht-Lines, and the car has been called "The Road Cruiser."

Even the door lines are unbroken. The tops of both the doors and the body are leather bound.

The tonneau is roomier, the rear seat is wider. Now three big people are comfortable on it. With seven in the car, nobody is crowded, and the two extra tonneau seats disappear when not wanted, doubling the tonneau room.

And now comes enameled leather upholstery over deep curled hair—a luxury which heretofore has been confined to costlier cars.

Ever-Lustre Finish

And now, best of all, comes a finish that stays new. We have built in our factory enormous ovens, large enough for hundreds of bodies. Now each coat of finish is forced on, then baked on. The result is a finish brilliant, deep and enduring. It resists weather, washing, rubbing, mud. You who have seen good cars quickly grow shabby will realize what this finish means.

Note that these advances come to you in a $1350 HUDSON. And note that this HUDSON, by keeping so far ahead, is winning by thousands men who demand the best. Wherever you go you will see this new-type HUDSON driven by men of distinction, men who know cars, old, experienced motorists. And this new model will undoubtedly win 20,000 more.

Go see it now. Most HUDSON dealers have it. And this, like every new-model HUDSON, is bound to be oversold. Last summer, thousands of buyers waited weeks for their HUDSON. This summer, despite our larger output, there will be waiting for those who delay. And you won't find a car for second choice anywhere near so attractive.

7-Passenger Phaeton or 3-Passenger Roadster, $1350, f. o. b. Detroit
Also a new Cabriolet, $1650, f. o. b. Detroit

HUDSON MOTOR CAR COMPANY
DETROIT, MICHIGAN

Ask your dealer about HUDSON service. It is exceptional and extreme. It will tell you one reason why HUDSON cars give such perfect satisfaction.

We have dealers everywhere. These are a few in your vicinity:

RHODE ISLAND DEALERS

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Keene—Louis E. Roundy.
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Whitefield—The Stoughton Co.

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FARM and FIRESIDE

The National Farm Paper - Every Other Week

ESTABLISHED 1877

Saturday, July 3, 1915 5 cents a copy

Enjoying the Fourth at Home

Pictures Worth While

FARM AND FIRESIDE believes that the cover pictures of the paper should be something more than just ordinary pictures—that they should tell a real story of country life and progress and that such pictures should give some idea of the power of country life to quicken the sympathies and broaden the viewpoint of those who come in close contact with nature. During the next few months a series of character pictures will appear on the covers of *Farm and Fireside*. Here are some of the characters that will be shown:

"The School Marm"
"The Country Doctor"
"The Country Preacher"
"The R. F. D. Carrier"
"The Veterinarian"

You will want to see these pictures and will find them good enough to preserve and frame as a permanent decoration for your home.

Lost $1,000

THIS is a lot of money to lose. Most such losses after all are due to carelessness and negligence, and this case seems to prove the rule. Where was the $1,000 lost? According to an article from a reliable authority which appears in *Farm and Fireside* next month, $1,000 a year is lost by many farmers because of the weeds growing in the fields and pastures of their farms.

Ofttimes farms average one-fourth, one-fifth, one-eighth, or one-tenth weeds. The writer explains in detail just how the various kinds of weeds can be "killed for all time."

$4,182 from Pork

A BUSINESS farmer who lives out in Pottawattamie County, Iowa, made this amount of money in nine months from his hogs—almost $500 a month. The next issue of *Farm and Fireside* will tell the complete story of this man's hog business, showing just how it is possible to make such a lucrative profit on a moderate sized farm by proper feeding and management. We deal with cold facts and results that have been obtained by a practical farmer. Every farmer who is concerned in the production of pork will find this article mighty good reading. It tells the practical secrets of successful pork-raising.

Another Story by Annie Hamilton Donnell

MOST all of our old readers will be delighted to learn that we have obtained another story from Annie Hamilton Donnell. This story will begin in an August issue of *Farm and Fireside* and will be read with interest by both old and young. It contains a rare combination of humor and practical common sense and other steadfast qualities which tend to give farm people and country life such a wholesome quality. You will find this story mighty fine reading.

Special Summer Rates

SHOULD you find an order blank in your copy of FARM AND FIRESIDE it means that your subscription to the paper is about to expire. Unless you renew real soon you will not receive the August issues of the paper and will miss all the good things described above as well as a great many other features which appear regularly in FARM AND FIRESIDE. For a short time we are extending Special Summer Rates on FARM AND FIRESIDE. $1.00 will extend your subscription for four years—104 numbers. 50 cents will extend your subscription for two years—52 numbers. 35 cents, our club-raiser rate, will extend your subscription for one year—26 numbers. Remember, these are our Special Summer Rates.

Mail your order to

FARM AND FIRESIDE
Springfield, Ohio

The Editor's Letter

At Coolfont Farm, July 3, 1915

OF ALL the Fourth of July celebrations of my life, I remember most clearly just two. One was held thirty-nine years ago to-morrow—centennial year—at Grundy Center, Iowa. We felt, all over the nation, that year, that something out of the ordinary was required of us. So at Grundy Center we came together in as great a crowd as that new country could muster, and held high ceremony.

The thing I remember is the sight of E. H. Beckman, the principal banker of the community, standing on the platform reading a history of that community up to the date.

I can see him as I write, standing with his beautifully berihboned manuscript in his hand, reading of the surface, the soil, and the climate of that part of Iowa. One sentence I remember word for word, I think. This was it: "Sometimes in winter, a severe storm, called a blizzard, springs up out of a clear sky."

I have memories, of course, of other Fourth of July celebrations, but that centennial one—and one other—is brightest in my mind. I think the centennial is thrown up into relief by Mr. Beckman's historical sketch. I felt that I was a part of history. I forget what was done with the manuscript: it seems to me that it was placed within the corner stone of a church then in process of erection, but I dare say this is not accurate.

After the country had all been settled up, and land in Grundy County had reached a selling value of $50 an acre, mayhap,—though Father said it never would be worth that, never!—I could imagine Mr. Beckman's manuscript being taken out of whatever it was placed in and read by our descendants, who would learn that in 1876, once in a while in winter, "a severe storm, called a blizzard, would spring up out of a clear sky" and make things hum.

The other celebration which I remember with equal clearness took place at Hickory Grove, about two miles from the site of the centennial affair. Whether it was before or after 1876 I cannot now determine in my own mind; but I know that my mother gave me a five-dollar bill in trust to "get changed" at one of the lemonade stands, she said—adding that I could buy a dozen lemons out of it. I went to a stand the owner of which was shouting the merits of his lemonade in such a cheery voice that it occurred to me that he would be an obliging person, and asked him if he could change that five-dollar bill into dimes.

The Man, I Thought, Insulted Me

He said no!

I shrank back into the crowd hurt, ashamed, and gradually I grew furiously angry. I saw that I had made some sort of blunder. Evidently I had gone about it the wrong way to get that five-dollar bill changed. I had never had possession of one before, and had made very few purchases of any sort. What right had he to say "no!" in that way to me—before all those people? It was an outrage.

And then, it all came to me in a jiffy. As by a stroke of genius I saw that if I should buy a dime's worth of lemons, and hand in that five-dollar bill in payment, the payee would just simply have to give me back the four dollars and ninety cents in change. To be sure, it might not be in dimes, but I never really wanted it in dimes anyhow.

I went to Jake Slifer's lemonade stand, bought the lemons, passed up the five-dollar bill, and got back my change—and went back to our station under a fine hickory tree in a roundabout way.

To the most interesting part of this Hickory Grove celebration, however, I have not referred. I am sure now that it was before the centennial year—perhaps two or three years before. The Grange movement had swept over that part of the country, and I suppose there were more members of the order in Iowa then than at any time since.

Ex-Lieutenant Governor Coker Fifield Clarkson had been a power in the Grange movement. He was Father Clarkson of the Des Moines "Register," and a noted agricultural writer. He was also a partisan politician of a strictness almost unknown in these days, and he saw, with anger and sorrow, that as soon as the farmers got into the habit of meeting for Grange purposes, they got unruly under the party lash.

Anyone who wants to get a picture of that Grange picnic should read Hamlin Garland's novel, "A Spoil of Office."

Now, from Lincoln Center Grange there came a group of men who carried a banner with a strange device. Evidently these men had read a call for a convention to organize a new party, for I remember their banner very well. It read: "As citizens we favor the Anti-Monopoly Convention. As Grangers we know no party."

Among the Banners was a Strange One

Now, that sort of banner, borne by a group of men belonging to an order which shunned politics, was a means rather of whipping the devil around the stump. In effect it said: "We're in favor of the new party, but further than that we are out of politics—while attending this picnic."

Father Clarkson was furious. He was to make the speech of the day; and when the chairman introduced him he rose, his naturally ruddy face crimson with choler. "I decline to speak," he shouted, "while that dirty political rag floats over my head!"

I stood near the Lincoln Center banner, and I saw those tall farmers gather about it like a group of ancient Vikings.

The picnic was stunned. The speaker refused to speak while that banner floated. The embattled farmers with the banner looked as if they meant it to float. Finally the matter was put to vote. The Lincoln Centerites won. Governor Clarkson decided that, after all, he would speak—and he did, and spoke well.

Here was history. Here stirred the beginnings of the great Insurgent movement in both parties, the People's Party, the movements which have changed political ideals in the nation.

To-morrow we shall meet again to celebrate the Fourth. Wherever the Declaration is read, I hope you will go, and hear it. Listen to good men wherever they speak on the issues of the day. This is a good time to forget other nations and their struggles, to remember that this only is our country, and to resolve strongly that our hearts shall in this time of stress be with her, and her alone.

Herbert Quick

Always in Good Humor

FAREWELL!

HE—Then you are not interested in my welfare?

SHE—No; but if the two syllables were transposed I'd not only be interested but enthusiastic.—Boston Transcript.

ECONOMY

"But your fiancé has such a small salary! How are you going to live?"

"Oh, we are going to economize. We're going to do without such a lot of things that Jack needs."—Buffalo Courier.

MARVELOUS!

The workman knows no sleight of hand.
Of magic powers he does not talk;
Yet he can make some motions, and
Behold, he makes the concrete walk. —Peoria Star.

FRUITS OF COURTSHIP

"What are the best fruits of courtship?"

"I should say dates and pairs."—Chicago Herald.

QUITE

"Was your husband cool when you told him there was a burglar in the house?" asked Mrs. Hammer.

"Cool," replied Mrs. Gabb, "I should say he was cool. Why, his teeth chattered."—The Furrow.

A MAN should always be able to use his hands. He can't always count on his friends, but he can always count on his fingers.—Philadelphia Record.

THE REASON

"My husband tells me that you fired him," complained Mrs. Rounder. "What was the matter with him?"

"He was loaded," replied the Boss.—Cincinnati Enquirer.

PUP—Great cats! That's nerve! Somebody has put up a building right where I buried a bone!—Puck.

NO, INDEED!

MARIE—And at the place where I stayed this summer a green young hired hand tried to kiss me. He told me he'd never kissed a girl in his life, and—

GWENDY—And what did you tell him?

MARIE—I told him that I was no agricultural experiment station.—Chicago Daily News.

THRIFT

BUTTONS—Get up! Get up! The hotel's afire!

SCOTTISH GENTLEMAN—Richt, laddie; but if I do mind ye, I'll no pay for the bed.—Answers.

NOT A CHANCE!

"The man I marry must have common sense," she said haughtily.

"He won't," replied he bitterly.—Denver Clarion.

"MADE IN U. S. A."

WILD-EYED CUSTOMER—I waut a quarter's worth of carbolic acid.

CLERK—This is a hardware store. But we have—er—a fine line of ropes, revolvers, and razors.—Yale Record.

QUITE PROPERLY

DILL—What happened when that hairless wonder went into the barber shop and asked for a hair cut?

PICKLE—He was bald out.—Penn State Froth.

FARM and FIRESIDE

—PUBLISHED BY—

THE CROWELL PUBLISHING COMPANY, SPRINGFIELD, OHIO

Branch Offices—381 FOURTH AVENUE, NEW YORK CITY; TRIBUNE BUILDING, CHICAGO

ENTERED AT THE POST-OFFICE AT SPRINGFIELD, OHIO, AS SECOND-CLASS MAIL MATTER

Copyright 1915 by The Crowell Publishing Company

Vol. XXXVIII. No. 20 SATURDAY, JULY 3, 1915 *Published Bi-Weekly*

Making More Beef

How the South is Being Freed of Tick Fever

By VICTOR H. SCHOFFELMAYER

TWO MILLION cattle, reared in the South, did not compete last year with the cattle of the North as stockers and feeders, dairy cows, and prime-fed beef because they died from tick fever. This death loss amounted to 35 million dollars. The other seven eighths of all of the beef and dairy cattle in the South were not worth as much by 40 million dollars as they would have been if they had not had the tick fever.

Cattle that recover from tick fever depreciate in value because they are stunted in growth, shrink in milk production, have lower vitality as breeding stock, and suffer discrimination in the markets. No amount of feed will offset the effects of the fever. Beef and dairy products cannot be produced at a profit in a tick-infested country.

The cattle-tick fever, called commonly Texas fever, is caused by a micro-organism known as piroplasma bigeminum, which lives in the blood circulation of the cattle tick. When ticks with the scientific name of *Margaropus annulatus* bite cattle, the micro-organisms of the fever get into the blood circulation of the cattle and cause the fever.

Government bacteriologists and entomologists in the laboratories at Washington have studied with minute care the life history of the cattle tick. It was found that the organism of tick fever can be transmitted no other way than through the bite of the tick. And that the fever parasite cannot live without the aid of the tick. These government men learned that cattle ticks can live only a few months away from their hosts—cattle—whose blood is necessary for the sustenance and development of the tick.

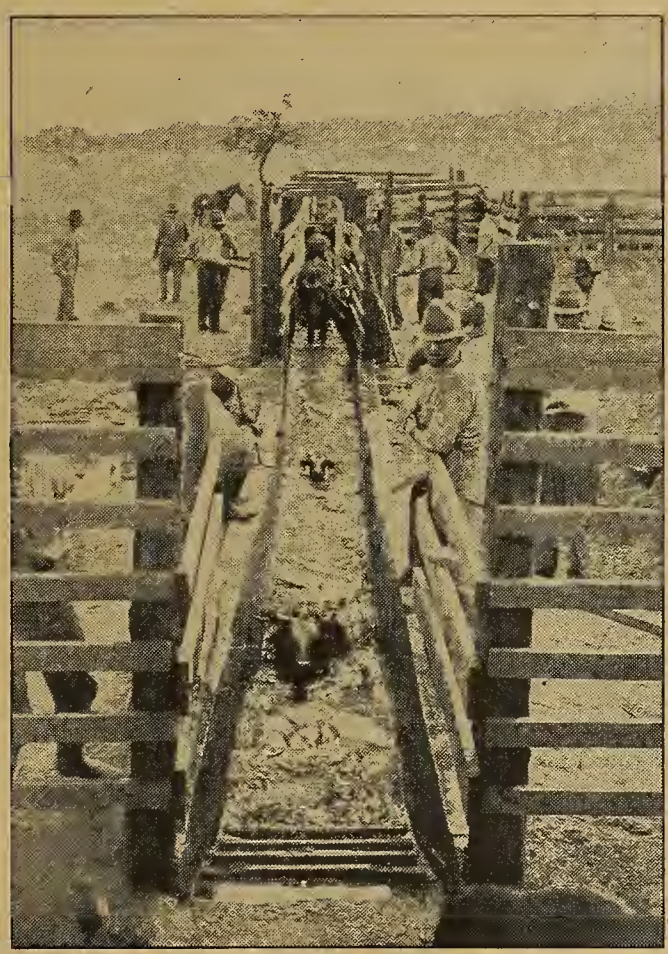
Dip and Hunger Kill Ticks

KEEPING cattle away from tick-infested pastures during a period long enough for all of the ticks to die from lack of food, and dipping the cattle in vats containing an arsenical solution, are the two methods to exterminate the tick used by the Bureau of Animal Industry of the United States Department of Agriculture in co-operation with the state and the county governments of the South.

In 1906 when the exterminating work began, there were about 741,515 square miles of tick-infested territory within the States below the quarantine line. In eight years some 225,000 square miles, or a third of the infested district, have been entirely freed of fever ticks. The cattle of this freed area enter the Northern markets under identical conditions with Western and Northern cattle. In the tick-free territory thousands of pure-bred, hardy Northern cattle have been introduced, thus improving the quality of the live stock.

Investigations by Dr. H. W. Graybill of the Department of Agriculture show there is only one true fever tick. This tick sometimes is found on the bodies of buffalo, deer, horses, mules, and sheep.

None of these animals, except deer and buffalo, contract tick fever; hence they are carriers of ticks but not of the disease.



Using a dipping vat, which any farmer can construct at a cost of $30, will keep the cattle healthy

The true cattle-fever tick in it adult stage is an olive-green or drab insect, usually very fat, being engorged with cattle blood. Ticks of all ages and in every stage of development usually adhere to a cow's or steer's hide. A female will adhere for from 21 to 66 days until she is fully engorged with blood, when she drops to the ground and begins laying 5,000 eggs.

The female tick usually seeks a moist hiding place under rubbish, where her brood may hatch sheltered from enemies. Freezing weather destroys large numbers, and continued wet weather is fatal.

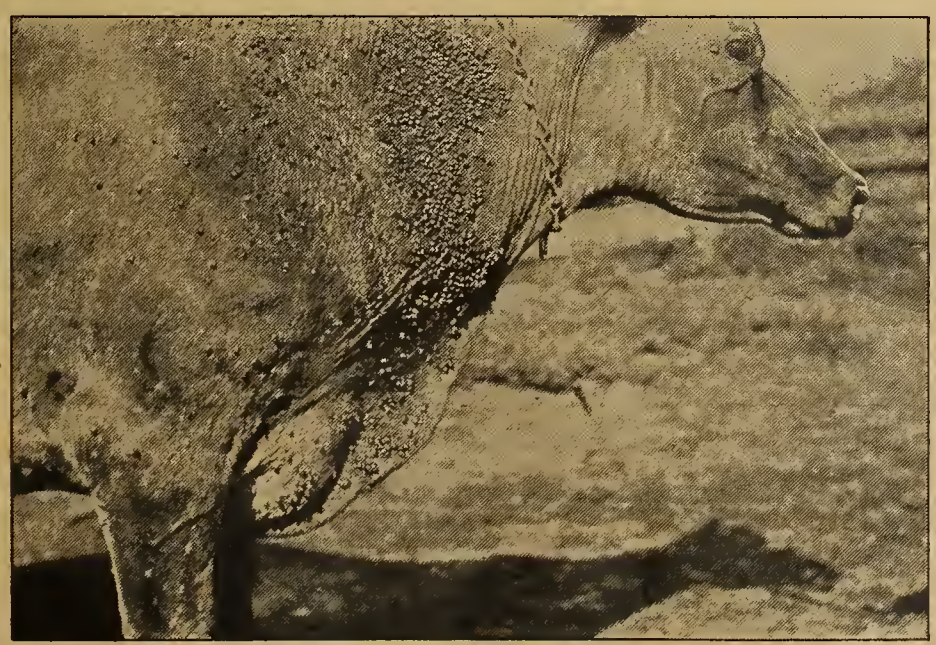
The eggs are laid usually in the spring, about 2 to 20 days after the mother tick has dropped to the ground. If the egg-laying starts in winter, it occurs after a lapse of 19 to 98 days. The eggs are amber-colored, a fiftieth of an inch long and elliptical. The female covers the eggs with a sticky substance which causes them to adhere in clusters. Cold weather interferes with egg-laying, which is usually completed in four days in the summer and 151 days in the winter. The female dies after egg-laying. Nineteen days after laying in the summer the eggs hatch. During the winter it requires 188 days. From each egg a six-legged larva emerges, called a seed tick. For several days it remains dormant, and then shows great activity, crawling to the highest weed and grass stems. Whenever weeds or grass stems are disturbed the tiny insects clutch the air vigorously, trying to fasten onto a passing animal.

Reach Maturity in Three Weeks

UNLESS a seed tick reaches a steer or cow within six to eight months, it will perish from lack of a host, on whose blood alone it can live. The points of attachment in a cow usually are the inside of the thighs and flanks and other tender but sheltered places. After three to five days the tick changes from brown to white, and after the fifth day it sheds its skin, emerging as a nymph with eight legs. In five to eleven days the tick molts again, and now comes forth sexually mature. The male is then a tenth of an inch long and will make no further growth. The female is slightly larger, and sluggish of habits. After mating, the female increases in size rapidly, and in from 21 to 66 days she becomes fully engorged, and drops to the ground where she lays her eggs. Three forms of ticks can be found in a pasture: the seed tick or larva, the egg, and the engorged female. On cattle are to be found: the larva or seed tick, the nymph, and the sexually mature insects of both sexes.

Rotating cattle from one pasture to another has freed large areas of ticks. In March and September by this method cattle are removed for 20 days from tick-infested pasture to tick-free fields or lots. During this time many ticks fall to the ground to lay their eggs. The cattle are now removed to a second tick-free lot or pasture, and kept 20 days, during which time many more ticks drop off. If the cattle are not tick-free at the end of this time they again are removed to another tick-free enclosure and kept for 20 days more. This period of 60 days is sufficient time for all ticks to have dropped off. No cattle are allowed in the lots for six to eight months where the ticks were dropped. The ticks will starve to death. Ticks can be removed from the cattle by this method in 45 days during the months of August, September, May, and June. If the work starts in October it requires eight weeks. November takes nine weeks,

The life-work of a female tick is to lay 5,000 eggs. This completed, she dies



Is it any wonder that two million cattle died from tick fever in the South last year, and that many Southern cows are undersized and thinly meated?

The male tick reaches maturity from two to three weeks after he finds a host

January ten weeks, and July only five weeks; February, March, and April seven weeks.

The dipping vat and the arsenical solution are employed much in the successful warfare against the cattle tick. A practical dipping vat can be constructed by any farmer at a cost of $30. Many townships and counties of the South have built public dipping stations, the expense of maintenance and operation being borne out of public funds. Under other circumstances men of public spirit and enterprise have erected dipping vats and pens at private cost for the public use of every farmer in the community.

Use an Arsenical Solution Dip

ARSENICAL solution may be made by boiling or by making a cold mixture. The cold-mixture method being known as the "S-B" dip. Dipping solutions are made in low and high strength, the low strength being used on farms and ranges where cattle are regularly dipped every two weeks for several months, and the high strength is used only when cattle from a tick-infested area are about to be transported to tick-free territory. The following formula for a low-strength dip of 500 gallons has been worked out by the Bureau of Animal Industry of the United States Department of Agriculture: Sal soda, 24 pounds; white arsenic, 99 per cent pure, finely powdered, 8 pounds; pine tar, 1 gallon. FARM AND FIRESIDE will be glad to furnish detailed directions for the making of these solutions.

A dipping vat should be located on a level site sufficiently large to permit of the construction of a cattle chute, dripping pen, and two detention pens—one for holding the cattle before dipping and the other after dipping. The length of vat should be 25 feet at the top and 12 feet at the bottom; width at top, 3 feet; at bottom, 21 inches; depth, 6½ feet. The excavation should be made one foot wider and one foot longer than the inside dimensions of the vat. Wooden forms are made of one-inch boards and 2x4 upright braces, the boards being nailed to the outside face of the braces. Sides and end should be built eight inches higher than the surface of the ground. Concrete should be laid in the bottom and sides of these forms at one operation, to prevent seams and joints which would result in leakage. A finishing coat a half inch thick is applied on floor and walls of concrete made of one part cement and two parts sand.

The exit incline is made of steps two inches high and twelve inches apart, using a stiff mortar of one part cement and two parts sand.

Precaution must be taken to keep recently freed cattle from having access to pasture frequented by tick-infested stock. Infection comes frequently from contact of cattle across fences. For at least ten feet on each side of a fence ticks are known to crawl. Dogs, cats, and prowling animals may carry cattle ticks and spread the fever germs. The safest method is to separate two pastures by having cultivated fields between. Cattle ticks cannot live long on cultivated land, free of live stock. Progressive Southern farmers and cattlemen have built a double fence about their pastures to prevent other stock from infecting their cattle. In six to eight months a farm is freed.

Any attempt to introduce tick-free cattle into a tick-infested herd meets with inevitable disaster. Northern beef or dairy animals on contracting cattle fever invariably die. This, it can readily be seen, effectually prevented the introduction of pure-bred live stock into the South. As a consequence, Southern cows are mostly undersized, thinly meated, speckled or spotted in color, showing the results of continued inbreeding.

The States That Have no Ticks

THE tick-extermination map issued by the Government shows the energetic work being done throughout portions of the South. Most striking is the record of Mississippi, where the entire east bank of the river has been freed from ticks in addition to a dozen more counties in the center of the State. Arkansas' slogan is to free the State north of the Arkansas River, about half of the total counties, by this summer. In Oklahoma the western and northern sections are tick-free, and in six months the greater part of the State will be free. Louisiana is following Mississippi's example, and a dozen counties are to be tick-free this summer. Georgia is among the leaders, as is North Carolina, followed closely by South Carolina. Tennessee is freed of cattle ticks, and almost the whole of Virginia also. Missouri was among the first States to be freed, followed by Kentucky. Western Texas is making rapid progress, and many counties in Florida and Alabama are tick-free. Even southern California is about to be freed from ticks.

The Farmers' Lobby

A Review of the Events that Caused Bryan to Resign

By JOHN COLEMAN

IN THIS recess of Congress the Government is running on, but it is not "business as usual." Not exactly. The usual business of Washington is discharged of course, but the things in which the country is most interested are decidedly unusual.

How the country at large feels we here in Washington have no means of knowing save by a study of the newspapers of the country; but that study convinces one that the whole nation, like the capital, is absorbed in war, war news, and our country's relations with the rest of the world.

This is one of the bad things—the innumerable bad things—which grow out of the great world war. We are suddenly hurled into a maelstrom of events which affect the very destiny of the United States, but over which we have no control. We have been off here in our own corner of the world with no neighbors whose good or bad opinion of us seemed to the average man of much consequence to us. We have been provincial—a nation of villagers, deeming ourselves the greatest and mightiest nation on earth.

Who Thought That He Would Resign?

ALL this has changed in ten months. The problems which have arisen, and the ones which are arising day by day, are new to us. Our own private political issues are just as important as ever—in fact, they are growing more important; but we are so overburdened with new questions that we are in danger of forgetting the things about which political campaigns have been fought in the past.

Who could have guessed when Mr. Bryan took the office of Secretary of State that by June, 1915, he would have resigned his office? Plenty of people, you say. Yes, that is so; for it was freely predicted that he and Mr. Wilson would not be able to get along. They said that Bryan could not sit anywhere but at the head of the table; that he could not take orders from anyone; that he and Wilson would split on questions of currency, or tariff, or control of corporations, or party politics, or patronage. But none of these things divided the men. Bryan turned out to be a docile and tractable subordinate. He helped Wilson put through his legislative policy with perfect loyalty—even to the enactment of a new banking and currency system which is satisfactory to the banking interests which have always regarded Mr. Bryan as their enemy. And it speaks volumes for the epochal change which the European war and our new problems have made in our affairs that Mr. Bryan has quit office and is now conducting a good old-fashioned Bryan campaign of publicity covertly, if not openly, opposed to the Wilson policies, not on economic or industrial issues, but with reference to our relations with the warring powers in Europe and Asia.

Truly, the curtain has been rung up, not only on a new scene in American politics but on a new play.

The general opinion here is that, in resigning, Mr. Bryan committed the greatest blunder of his life and destroyed his leadership of the Democratic Party. It is thought among the best judges of American politics that the Bryan fortification has been destroyed as completely as a Belgian fort by a German 42-centimeter gun—and that he made, loaded, and fired the gun himself.

Why he quit the Wilson cabinet is not clear to anyone. I suspect that it is not very clear to himself. I believe that the reasons cannot be clearly stated because they were not based on logic, but on feeling. Bryan just simply felt that he could not go on as Secretary of State any longer. He felt that the drift of things is toward war as a possibility, at least, and his whole nature revolts against war. As Secretary of State he would be obliged to carry on negotiations with Germany, and possibly with Germany's foes, on the theory that if certain things are not done or left undone we shall fight. These things he could not do, Bryan being Bryan.

Let us try for a moment to put ourselves in his place, and let us imagine the crisis with Germany a controversy between two of us about, let us say, a line fence. Let us suppose that Mr. Bryan had been retained to carry on the settlement of the line-fence

—Harding in Brooklyn "Eagle"

"I haven't resigned"

disagreement as attorney in fact for one of us. Let us suppose that when he took the attorneyship he had done so in the full belief that no lawsuit would ever become a possibility. Let us suppose that he had conscientious scruples—as some excellent people have—against lawsuits. Let us suppose that he had adopted the rule of conduct that if a man sue thee at the law, and take away thy coat, thou shouldst give unto him thy cloak also.

And now let us suppose that things took such a turn in the controversy that both parties were determined that, unless certain things were done or not done, they would go to law. No one could blame Mr. Bryan, conscientiously opposed to lawsuits, if he said, "You people are threatening to go to law about that line fence. I am opposed to lawsuits. Such being the case, I cannot represent you any longer. I resign my attorneyship."

Nobody could say anything in just criticism of such a course if his resignation were made in such a way as not to embarrass the people who had employed him. It would reflect credit on the man who laid down a profitable or honorable task for such motives.

The situation is not quite the same in Mr. Bryan's case, but it is nearly so. Mr. Bryan is not an absolute "peace-at-any-price" man, like a Quaker, a Mennonite, or a Doukhobor. He has a military record. When he enlisted in the war with Spain he must have expected to lead his men in battle—to their own death and the death of their foes, if necessary. But he has grown more and more opposed to war every year since 1898. More and more he has approached in his writing and speaking the position of Tolstoy the Non-Resister. I think that it was this sentiment, rather than any logic, which impelled him to resign.

Moreover, he has during his term in the Wilson cabinet been working hard and incessantly on his arbitration treaties. He has become as much enamored of this his darling scheme for preventing war as he was of free silver in 1896 for preventing panics and hard times; and he is clinging to it with just as much stubbornness. It is his way. When he believes in a remedy for war, pestilence, or famine, he believes with all his heart. That is why so many of us are so fond of him. That is why so many Americans love him, and always will.

There are all sorts of stories in circulation as to subtle, sinister, and selfish motives which caused Mr. Bryan to resign. Some say he means to run for the nomination for the Presidency in 1916, and is taking the pro-German side of the crisis so as to align back of him the pro-German voters. The answer to this is that Mr. Bryan is a prohibitionist, and that about the rarest thing in American life is a German prohibitionist.

This is Now the Great Bryan Mystery

BESIDES all this, he must have realized that while the sympathizers with the Germans in the Lusitania controversy may be numerous enough to change the result in a close election, no election on that issue would be close. He must have known, and he did know, that the American people are united behind the President in this matter as they have never been united since they supported McKinley in the Spanish War. No, Mr. Bryan must have known that when he did something which looks like a desertion of the President at a very critical time, he would lose popularity. To him, this sacrifice was a very real one.

This is what may be called just now the Great Bryan Mystery.

It is rendered more mysterious by the bad judgment or bad luck which attended the act of resigning. He quit rather than sign the second Wilson note because, he says, it was too warlike in tone. But it was not as warlike as the first note which he did sign. It was accepted in Germany as less warlike. Mr. Bryan says that certain changes were made in it after he resigned, but they were not important enough to have made any difference in his resignation. The second note was no stronger than it had to be, unless the United States was going to back down from the position taken in the first note. So one must believe that Mr. Bryan resigned because Mr. Wilson would not back down from the position taken in a former note which Bryan himself had signed.

A good deal of criticism is heard in political talk here, and apparently almost everywhere, because Mr. Bryan keeps up a fusillade of statements in the press. Many of Mr. Bryan's best friends find it hard to defend this. They think that he ought not to embarrass the President—that after he had resigned his job of settling the line-fence controversy it would be in better taste and a truer service to the country if he kept still and let the fellows who had the job of settling it proceed without being bothered by him. He has repeatedly stated that Wilson and he differ only as to the means, and not as to the end. Both want to avoid war; but Bryan wants to avoid it by changing the policy from the "Thou shalt not kill our citizens" to a policy of "arbitration and investigation."

The country thinks that Wilson's judgment is the better of the two. The reception of the second Wilson note in Germany seems to be proof that firmness was a more peaceful policy than yielding would have been. There seems to be no doubt that at the time this is written, which is before the receipt of Germany's answer to Wilson's second note, Mr. Bryan has lost enormously in public following, and Wilson has gained proportionately.

As yet there is no breach between the two greatest members of the ruling party in the United States, but most people think there will be. This, however, is all speculation. There is a little rift within the lute. Whether or not it will grow until the whole, formerly harmonious instrument is cracked and mute or discordant is a great political question. Anyhow, the resignation of Bryan is the biggest thing which has happened in our political life for a long time, and it will be in the United States school histories of the future. It may mean the disruption of the Democratic Party—but I think the probabilities are against that.

EW

Getting $100 a Cow

Cheese and Co-operation are Bringing Oregon Farmers Success

By HARLAN D. SMITH

MORE that 3½ million pounds of cheese, valued at $541,748.46, was the output of the 18 farmers' co-operative cheese factories in Tillamook County, Oregon, during 1914. Fifty-two hundred cows, owned by 486 farmers, produced the milk that made this cheese. The average return for every cow, after deducting factory expenses, was nearly $100. This is a remarkable average for 5,200 cows, none of which received a pound of grain.

Marketing the cheese at a good price, and summer dairying, is the secret of the unusual returns. Summer or pasture dairying is the rule in Tillamook. Few herds are milked during the winter months, when feeding would be necessary. The abundance of pasture in spring, summer, and fall and the high freight rates on mill feed have worked against winter dairying.

The advisability of such a system may be questioned by some persons, but it seems the most profitable method in Tillamook County, which is a pasture country. Abundant rains nourish tender grasses, which are ideal pastures almost the year round.

By reason of much business ability and good salesmanship, Carl Haberlach, starting with only one cheese factory's product eleven years ago, now is secretary-salesman for the 18 co-operative cheese factories, and has built up a selling service that virtually makes its own prices, and regulates the cheese business of the Pacific Coast States.

During the eleven years of co-operative selling, Haberlach has seen the price paid to farmers for butterfat increase nearly 100 per cent, while the county's output of cheese also has nearly doubled. Forty-one and three-tenths cents a pound was the average price paid for the butterfat at these 18 factories in 1913—the 1914 figures are not yet available, although it can be said neither the war nor the tariff have affected prices seriously this year.

Furthermore, co-operation has raised the standard of this county's product until now Tillamook cheese is as well known on the Pacific Coast as is Elgin butter in the East. A rigid inspection service has made this possible. And along with it has come an increase in the yield of cheese the hundred pounds of milk that has saved thousands of dollars to the members of these co-operative associations.

In 1909 the Tillamook factories were getting 10.7 pounds of cheese from every hundred pounds of milk. Fred Christianson, inspector for the allied factories, has increased this yield gradually to 11.1 pounds. On the face of it, that doesn't appear as a very great difference. Yet it would have meant a difference, last year, of 166,268 pounds of cheese for the 18 factories, worth $25,688.41—enough to pay, several times over, the cost of both the selling and inspection services.

Farmers Do Not Force Up Prices

THE entire product of the factories is sold every month on the open market. No stock is accumulated for the purpose of forcing the price up. The four factories not in the association profit by the co-operation, getting nearly as good prices by reason of the reputation the co-operative factories have established for the county. It is just a successful co-operative selling association, and the worst thing that can be said about it is that Tillamook farmers, through its advantages, may be making money too easily. Some farseeing men in Oregon—dairy experts—agree that such may be the case, and that it may result in a tendency toward lax methods of dairying—easy farming. A live county agriculturist, the officials of the association, the dairy department of the Oregon Agricultural College, and the more progressive farmers of the county are working to offset this tendency. It looks as if this combination should prevent anything like degeneration.

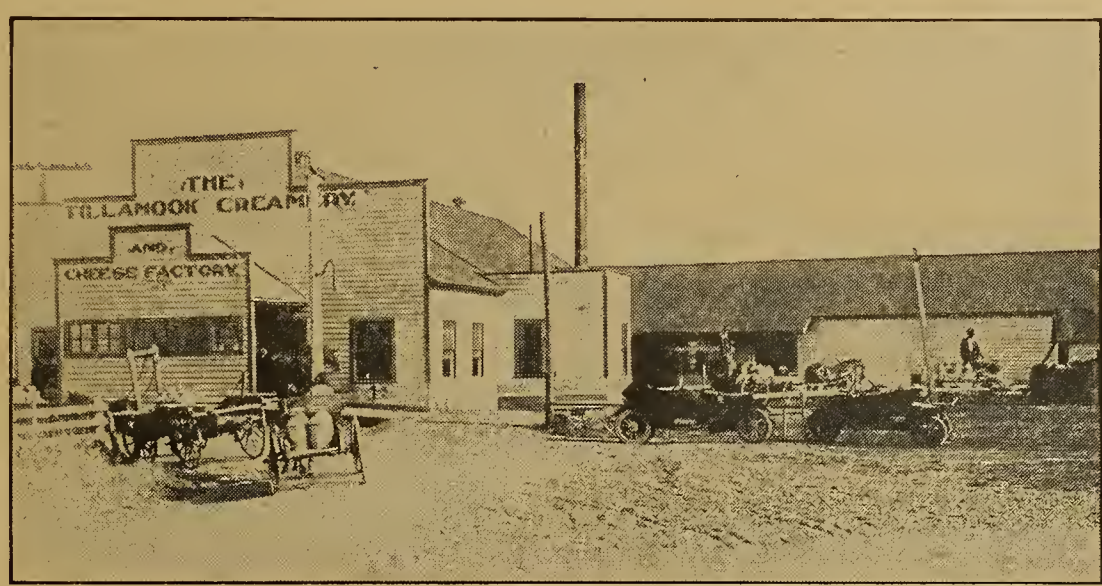
The first co-operative factory in Tillamook County was organized about fourteen years ago by some twenty or more farmers, who assessed themselves only $25 apiece at the outset, drawing on their good credit for enough more to build and equip the factory. When Haberlach was elected secretary-salesman for the factory a few years later, the stockholders voted to set aside 1¾ cents a pound on the finished product to cover factory expense. By good management the factory has been able to save enough on this levy to pay off the debt incurred in building the factory. The original stockholders now declare themselves an annual dividend of 20 to 50 per cent of the amount of the original investment.

Anyone could bring milk to the first co-operative factory. Now newcomers may take $25 worth of stock and share in the profits, but none may sell his stock without first consulting with the trustees of the association. This is a precaution against a trust obtaining a controlling interest.

The success of the first co-operative factory was so marked that others sprung up rapidly, crowding out the privately owned concerns. To-day 20 of the 22 commercial plants are owned co-operatively by farmers, 18 of them having a central selling and inspection service. In 1902 there were approximately 40 cheese factories in the county. Four were owned by farmers and operated as commercial factories, 16 were owned privately and operated as commercial concerns, while there were some twenty small factories on farms that were making the milk from one or more dairies into cheese. Now, one factory is taking the place of several in some communities, and is doing better work, while new ones have been built where needed. The number of farm factories has been cut down to two or three, and there isn't a place in the county where a considerable amount of milk is produced but that is supplied with a factory.

A Young Lawyer Works Out the Plan

IN THE latter part of 1903 the secretary of the Tillamook City Co-operative Creamery was compelled to go on a health-seeking trip, and the directors elected Carl Haberlach, a struggling young lawyer, to succeed him. This factory was in a shaky condition on account of the competition it had met from the privately owned plants. The milk receipts for that year were unusually low. Farmers were discouraged. Investigating the situation, lawyer-like, Haberlach learned, among other things, the significant fact that all the factories were trying to sell to the same dealers.



The output of this co-operative cheese factory, which is one of the largest in Tillamook County, was 463,000 pounds of cheese last year

"I saw that that kind of competition didn't pay the dairyman," said the sales manager afterward. "The dealers were keen enough to play off one salesman with another, you may be sure. I changed the regular tactics somewhat, and having done fairly well for this factory I tried to get the sale of cheese made at other co-operative plants, and about a year later I was made secretary of the Clover Leaf Creamery. In 1905 I was acting as salesman for five factories. Mrs. Haberlach and I did all the bookkeeping, and even now, with 18 factories, we do all of the office work from adding milk receipts, determining butterfat, and paying the farmers, to the selling and shipping.

"From 1905 things went differently, and it wasn't long until the co-operative factories had the others on the run. The farmers felt that they were getting more for their goods and that they were running their own business. That fall one company, operating seven factories, went into bankruptcy, owing the farmers several thousand dollars. That was a big boost for co-operation. In the next year or two several other private concerns quit; some went into bankruptcy, and others made terms with the farmers by selling the plants already in operation.

"As I see it, here is the cause for the overthrow of the private factories: When farmers wanted to know something about prices received by the factory operators, they were told that the matter of cheese prices did not concern the milk producer. It always seemed to me that the producer and consumer are the ones most interested. Likewise, butterfat tests caused much dissatisfaction, but one seldom hears complaints about tests any more.

By increasing the yield of cheese the hundred pounds, Fred Christianson, inspector, effected a saving of $25,000 in one year for the members of the eighteen co-operative cheese factories

"The dairymen had no trouble getting capital needed for building factories, nor in getting cheesemakers to make the cheese. A cheese factory will cost from $1,500, for a small one, to $4,000 or $5,000 for a larger plant. A $5,000 factory can take care of 25,000 pounds of milk daily."

Although the co-operative factories employed the same selling service and were working in harmony, there was no amalgamation of the concerns until 1909, when the Tillamook County Creamery Association was organized. This union was, primarily, to improve the quality of cheese produced by the co-operative factories. When in 1908 the output had increased and new markets had been sought, complaints about the quality of Tillamook cheese became too frequent. Most of the cheesemakers were doing the best they knew how, perhaps, but often they would mix off-flavored and gassy cheese with the prime article in the same box. By co-operating it was hoped to employ inspection service, thereby improving the manufacture and raising the standard of the cheese.

The inspector, Christianson, makes a daily report to Haberlach, giving the name of the factory inspected, the number of cheeses found, and the condition of the cheese. All cheese that does not come up to the standard in quality, according to the judgment of the inspector, is placed in "plain" boxes. These boxes bear the name of the factory and its number, but not the words of the official stamp: "Inspected by Tillamook County Creamery Association." This product is sold as second-grade cheese. So effective has been the inspector's work in grading, that very little second-grade cheese—probably less than one per cent last year—now is made.

Two styles of cheese now are made—triplet and Young America. About 98 per cent is triplet. The patent cheese cutter has almost eliminated the old style twins, or flat cheese. The cheesemakers prepare duplicate reports showing the style and number of cheese made every day, and the milk receipts. One copy of this report is sent to Haberlach weekly, and one filed at the factory or sent to the president of such factory. The cheesemakers make their product ready for market, packing three to the box, a box weighing 70 pounds net. About 90 per cent of the product of the co-operative factories is shipped by water from Tillamook, which is on the coast. Water rates are about one half rail prices, although the association recently obtained a good carlot rate by rail.

Prevents a Glut in the Market

THE principal markets for Tillamook cheese are Portland, Los Angeles, San Francisco, and Seattle, in the order named. Formerly the market was limited to Portland, and as a result a glut at seasons of heaviest production usually was the case. The plan of the Portland dealers was to depress the market early in the season, then raise it later on when stock had been bought, so they could make a good margin. Now, with 85 per cent of the county's cheese at his disposal, Haberlach is able to distribute his product up and down the coast, supplying the various markets according to demand and their several needs, thus preventing a glut when production is high. Haberlach apportions the cheese as it is ready to ship, usually favoring southern California earlier in the season, and going north as the season advances. There is no set plan of procedure, but a number of years' experience has enabled the sales manager to know what plan is best every year as the season comes on. Considerable cheese is shipped in pool cars; in fact, all cheese shipped to Los Angeles is made in pool-car shipments. A transfer company divides the lot on arrival there and makes deliveries to the purchasers. This method enables the buyers to effect a considerable saving in freight, besides getting better service with car shipments.

"Formerly cheese was consigned and the farmer or factory operator took what the dealer paid him," said Haberlach, "but now we fix the prices. Of course it is impossible arbitrarily to fix a price and tell the dealer we must have that price for our goods. We must be guided by several things, chief among which is the price of cheese in New York and Wisconsin. We keep informed of the production in other parts of the country, the amounts in storage, and the like, as well as general conditions in our own territory. Telegrams are received from Wisconsin call boards showing sales and prices. The general rule for arriving at our selling price is this: To the price of New York or Wisconsin cheese is added the freight to this coast, and then the freight from Tillamook is deducted. That is the rule, but it is often broken. The demand for cheese up and down the coast, the supply on hand, and the amount being produced enter largely into the matter.

"But when a dealer calls us up about cheese, he knows that we know prices and conditions, and he knows that we know that he [CONTINUED ON PAGE 16]

FARM and FIRESIDE
THE NATIONAL FARM PAPER
Published every other Saturday by
The Crowell Publishing Company
Springfield, Ohio

Subscription Price
One year (26 numbers), fifty cents. Three years, one dollar. Extra postage for Canada, twenty-five cents per year.

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HERBERT QUICK, - - - - - - - - Editor

July 3, 1915

A Continuing Crisis

THE crisis with Germany still continues at this writing. President Wilson's second note to Germany has not yet been answered; but there is a general feeling that the matter will not pass beyond the limits of diplomacy.

The friendy tone of the President's note and the tolerance which marked the acceptance of it by the German press seem to be about the only real warrant for this hope. Germany is still sinking merchant vessels by means of submarines, and passengers and crews are drowned. In most cases, however, merchant vessels sunk since the first Wilson note have been destroyed with due regard to the safety of non-combatants.

The note from Germany and the President's reply have not settled the controversy. We must still, as good citizens, support the President in his skillful and able efforts to avert war and at the same time maintain the rights of peaceful vessels to sail the seas with safety to passengers and crew.

Two things are now settled. First, the Lusitania was unarmed. Our port officers did their duty before she sailed, and examined her. She not only carried no guns, but her decks had no reinforcements on which guns could have been mounted. "Fortunately," as the President stated to the German Government, we are able to give official guaranties on that.

Second, the Lusitania carried none of the explosives the carrying of which is forbidden by law. She did carry fixed ammunition, but that is not forbidden. It is not dangerous to passengers. It is only contraband of war, giving the German warships the right to stop the ship and capture her if it is found in the cargo.

The third and most pleasant thing in the note is the offer of the President to do all he can as a mediator to bring about an agreement by which Great Britain and France will lift their blockade on food products shipped to Germany if Germany will cease her illegal treatment of merchant vessels.

Both policies are illegal, and both should be discontinued. But whether or not such an agreement is reached, we must all understand that the President will firmly demand safety for Americans sailing on unarmed merchantmen. This issue is still unsettled, and it is still a momentous and threatening one.

Types in Hens and Cows

MR. MILLER PURVIS in the "Breeder's Gazette" says: "After thirty years of poultry-breeding I cannot select good layers by looking at them, and I have given up trying." He tells a story of a test in hen-judging made by Professor Dryden, the poultry expert. Mr. Dryden had several hens photographed in various positions, and sent the pictures to experts all over the country with the request that the good layers be distinguished from the poor ones. Mr. Purvis was one of the judges, and selected the hen that made the poorest record as an excellent layer, and left out the best hen altogether. A bookkeeper who knew nothing about chickens made about as good a guess as any of the experts. All the experts fell down so humiliatingly that their names were suppressed to save their faces.

This writer makes these statements in questioning Professor Quisenberry's assertion that there is reason to believe that there is an egg-laying type of hen, just as there is a dairy type of cow. Mr. Purvis doesn't believe that there is any laying type of hen which can be selected by sight. Neither do we—as we have stated in these columns repeatedly. The trap nest is the only thing which tells, and the individual pedigree of the fowl is the only assurance in breeding for laying.

And when we have looked over some of the observations of a few of the European dairy authorities, we are inclined to think that there is a good deal of error in what we are taught about the dairy type of cow. Probably the scales and Babcock test is the only way to tell a good milker, and the individual pedigree the only assurance of dairy excellence in cows.

When a man buys a cow of "dairy type" he stands a better chance of getting one with a good pedigree—even though he may not know it—than if he buys one of the beef type. But when it is stated that the beef type of cow cannot be made to perpetuate good milking qualities, we respectfully refuse to believe it.

The accepted laying type of hen is a myth; the accepted milking type of cow may be also.

Study the Trains

THE wholesale produce market of New York City begins operations at midnight. Most of the sales are over by 6 A. M. Produce arriving after 6 A. M. cannot be sold until the market opens the next night. In the meantime it may go far toward being spoiled.

Similar conditions exist in most markets. Shippers should find out about these things, and load on trains which will land the fruit and vegetables at the proper place at the right time.

A night trip to the station may make all the difference between profit and loss. A person making a personal journey to the city always finds out about the time of arrival, and starts accordingly. A consignment of produce is often of much more consequence than a bit of personal inconvenience.

"18,000 Men Wanted!"

THIS is a headline in many daily papers. The place where the field hands are wanted is said to be Oklahoma.

The statement may be true, but nobody knows whether it is true or not. It is a reproach against the governments of our States and the nation that we do not know in advance approximately how many hands are going to be needed to harvest the crops.

There is a tragedy every year in this excuseless treatment of the problem of labor supply in harvest. Poor men spend their last cent, ride brake beams, walk the roads and the railway tracks to meet the supposed needs of the farmers for hands. Nobody guides them aright. They go wherever chance and the roads may lead them. Five hundred may go where a hundred can be used. None may go where five hundred could get work.

Landed in strange places, workless, moneyless, and angry,—as they have the right to be,—they become a vexation if not a menace to the communities in which they are stranded. Public resentment awakens. Cruelties are practiced. Disorders occur.

It is all shameful. We ought so to organize matters that there would be a man for every job if possible, and no more, and none of this aimless dependence on newspaper reports as ignorant as they are sensational, and on rumors and wild estimates emanating from irresponsible persons.

Cowpeas After Chinch Bugs

CHINCH bugs are bad this year over a very large area. Many fields of corn will be ruined by them after they leave the small grain. A great many of us will neglect the various precautions which keep them out of the corn.

When corn is gone, what shall we do with the land?

Here is one suggestion: In most of the chinch-bug country cowpeas will make a good crop of hay if sowed before the 10th of July. Select an early variety, double-disk the ground, and a profitable crop of forage may be grown.

Our Letter Box

Alfalfa and Oats

FARM AND FIRESIDE: I sowed alfalfa last year about April 15th. I used a drill with seeder attachment, and sowed 1¼ bushels of oats per acre. I used 50 pounds of alfalfa seed to 4½ acres, and used the disk drill.

Results: I harvested 35 bushels of oats per acre, and cut four large loads of hay the same fall. The hay was fine except for having oats stubble in it, but I now have my ground in nice shape for the coming crop. By sowing in April the clover gets the benefit of spring rains, and by the time winter sets in the roots are from 2½ to 3 feet in length, and will not heave up by frost.

I have noticed that in late sowing the roots are so short that if we have a bad spring on clover it is bound to heave up. I have seen nice stands lost that way, but the only failure I have seen in spring sowing with oats is where they sowed two bushels of oats per acre and oats got so thick that it smothered the little plants.

I know of one case last year where clover got six inches high and was then smothered by oats.

I am going to sow 3½ acres this month. I engaged 40 pounds of seed this morning (April 1st) over the telephone, but I intend to use only one bushel of oats per acre. E. C. HAGER, Ohio.

Dragged Roads are Smooth

EDITOR FARM AND FIRESIDE: I noticed in the May 8th issue a letter by W. F. Muse in regard to dragging snow off the roads in Cerro Gordo County, Iowa.

I believe we can go him one better in Carroll County, Missouri. In Carrollton Township we have an organized force of farmers. Each one drags a certain three to five miles of road each time it needs it.

When the roads are ready the farmers start about the same time, and in three or four hours the entire township is as smooth as a ribbon.

The township pays 50 cents a mile for this work. Most of the farmers dragged the snow from the roads several times last winter, and where the roads were well graded up they were dry before the snow started to melt from the fields.

R. A. FAULK.

Believes in Having Light

EDITOR FARM AND FIRESIDE: I am enclosing $1 in payment for FARM AND FIRESIDE for some time ahead. Some two years since I made plans for a new hog-house. I sent them up to your paper for examination. This house was original with me, and I thought it great. It is round, or rather ten bents in a circle with a concrete floor in the center, being 100 feet in circumference. I had intended roofing the center, but you suggested that it would be too dark, and I omitted the roof over the center. I would not to-day, for the price of the paper for several years, have a roof over the central feeding floor.

W. W. SHAY, North Carolina.

Likes His Work

EDITOR FARM AND FIRESIDE: I always look forward to the day when my next paper is due. The editorial page interests me first, and I like the optimistic spirit; but it is amusing to read the pessimistic letters you receive.

I often wonder why people look at everything with so much worry! Seems like some people would kick if they were going to be hung. We did not bring anything here with us, and I do not see how we are going to take anything away when we go.

If I thought there was nothing else in this world but just to struggle for the almighty dollar, I think that I should be willing to give up the ghost. Still I realize that we must all live.

When I was first married I had only enough money to purchase a little furniture, but by doing the best we knew how we finally managed to save enough to buy us a five-acre tract. Just what we wanted! We enjoyed getting it, and we enjoy making it worth the raising of the taxes every year.

I suppose if we kicked because we had to pay taxes we should probably kick because we didn't have a home. We ought to be thankful we have a place to call home, where we are able to raise hogs even if they cost $6.70 to feed.

It reminds me of the story of the man who paid $5 for a pig, and after spending $10.50 for feed he sold him for $15.50 the following spring. A neighbor said to him, "You didn't make much off your hog, did you?" He said, "No, but I had the use of him all winter."

We have to profit by our failures.

One year I set out almost an acre of strawberries. I got the plants from a man who was digging up his old patch. I was green at the business and set them out. Being old plants, of course I did not get enough berries to pay for the picking. I didn't growl and give up and say there was nothing in it, but I tried to find out how to grow strawberries.

We have been picking berries since the 1st of May, and getting a good price for them because they are early.

We have all of our place set to fruit. We hear so much about the fruit industry being overdone, but we are not alarmed. We will have all that we can eat, and that is lots of satisfaction for us fellows that came from the prairie.

I know there is lots of hard work attached to fruit-growing, but if one is really interested in any kind of work it is a pleasure. E. A. LAGERGREN, Oregon.

Harvesting Done by Pests

EDITOR FARM AND FIRESIDE: Our locality is afflicted with a mysterious disease that affects all kinds of animals. Several experts have examined the brains of dogs and coyotes that have died with the disease, and pronounced it hydrophobia.

The disease has now spread into all the counties of eastern Oregon.

Besides dogs and coyotes, pigs, sheep, cows, and horses are affected with the same disease.

As soon as animals become affected they look wild and want to travel. Hogs jump up off the ground squealing and biting. Some of the animals are also affected in their backs, others in their legs.

A number of farmers have lost as high as ten head of stock. Nearly all the dogs and coyotes in the localities first affected have died from the effects of the disease.

So grave is the situation that the State has placed a bounty of $300 on coyotes in an effort to exterminate them, and a fine of $100 is imposed on any owner whose dog is found at large without being muzzled.

Another pest making trouble for the homesteaders here is the jack-rabbit. These rabbits breed in the sage brush where the land is unimproved. A bounty of 5 cents per pair of rabbit ears has thinned them out considerably, so that farmers now have some hopes of raising grain this season. Last year the rabbits ate 20 acres of grain for us. The rabbits cause the fields to look as though they had been cut by a mowing machine.

MRS. H. D. CRAIG, Oregon.

"As Others See Us"

FARM AND FIRESIDE is welcomed in our home as the coming of a friend. I am greatly interested in the poultry columns.
MISS RACHAEL CARLE, Connecticut.

I AM not looking for any reductions or bargains in your paper. It is worth its face in gold any old time to me or anybody else. E. J. ANGLEN, Montana.

THOSE covers you have used the last three months are surely fine ones. We keep those we like best. The picture of the boy and the calf was one of the best.
L. E. MANOR, Missouri.

I GET the most benefit from the live-stock department. The reason is that I am interested in live stock. There is not a part of the paper I do not read.
H. O. HONNOULD, Minnesota.

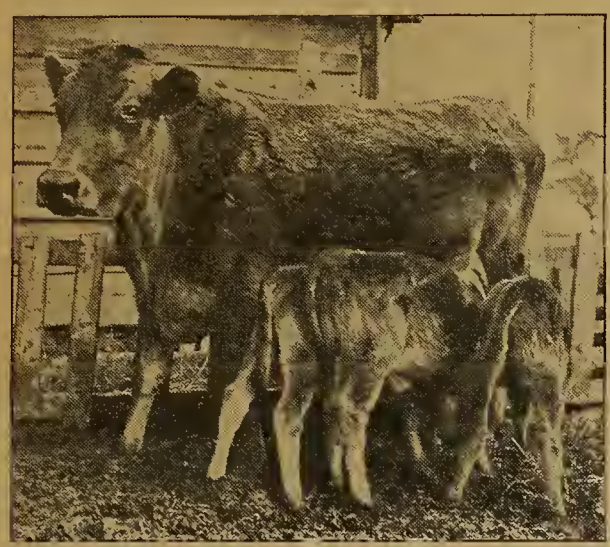
IF THERE were fewer Jennie Woodruffs and more Jim Irwins there would be better times all over, and there wouldn't be so many high-collared boys and girls walking the streets.
MRS. N. E. PAGE, Oklahoma.

LET good wholesome stories come; they are the life of a paper. When we think we are getting too old to read stories—good stories—we are getting too old for anything else.
H. A. KRUSE, Oregon.

EW

Glimpses of Farm Life

Rural America is Doing an Unusual and a Many-Sided Work

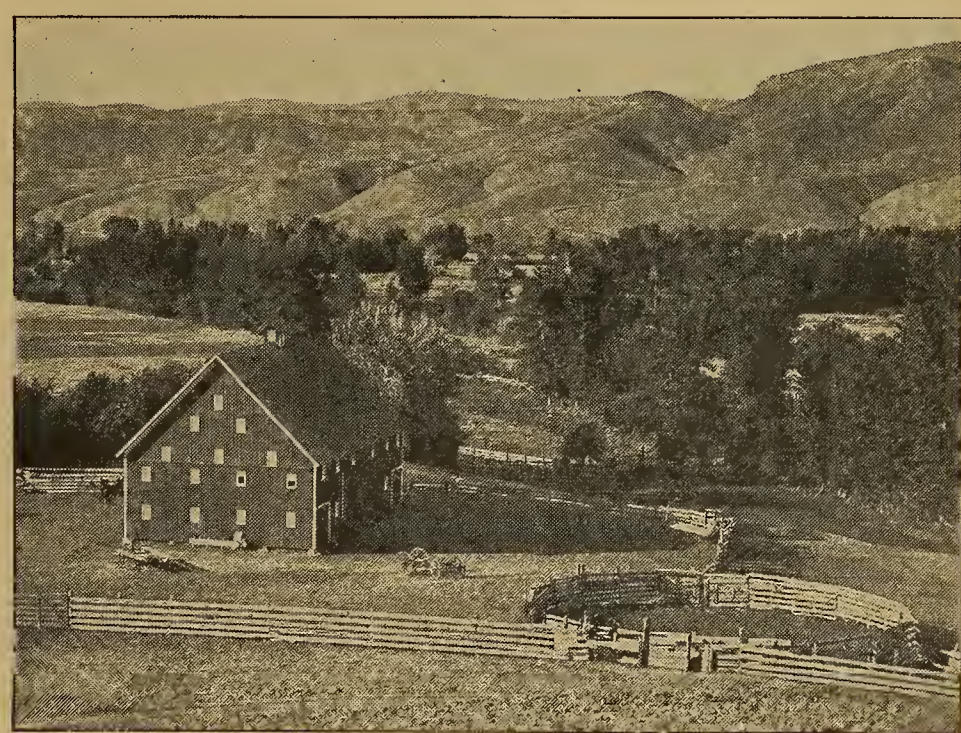


Triplet calves, two heifers and a bull, were born to a six-year-old grade Jersey cow on the farm of A. J. Humphrey in Montrose County, Colorado. The cow is rearing the calves

Clearing land is simplified by the use of explosives. The soil is dug away from a part of the roots, a hole is bored in the base of the stump, explosive is placed in the hole and fired. A long bit is used

These fawns were reared and are owned by Harvey Croft near Lancaster, Wisconsin. A small herd of deer is owned by Mr. Croft. The fawns are tame, and will feed from one's hand

The blooming peach orchards in the Grand River Valley near Palisade, Colorado, compare well with the rest of the scenery of the valley. Many of the peach orchards in this valley are protected from frosts by high cliffs. Smudge pots are used when the temperatures are low



The farm buildings as well as the scenery in the John Day Valley in east central Oregon are unusual types, and are pleasant to look upon. A corral is shown in the foreground. Because lumber camps are near, many wood fences are used. The barnyards are kept free of litter

Many thousand head of American reared horses are hauling cannons, ammunition wagons, and other supplies on the battlefields of Europe. Where the motor trucks and other cars can not be used, the horses go. A sale of western horses to the buyers of European powers is shown at Miles City, Montana

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United States Rubber Co., N. Y. City

Garden and Orchard

Flexible Filling for Trees

MANY tree-surgery repair jobs have proved disappointing. The concrete material used for filling the cavities has been too rigid. When the branches and smaller trunks sway and bend, the concrete filling cracks and crumbles, leaving a rough, unsightly surface which is not weather-proof.

For large trunks and cavities one part of asphaltum, such as is used for street paving, to five or six parts of sawdust is better than concrete because it is not so rigid. The sawdust is stirred into hot melted asphaltum.

For small tree trunks and branches that will bend, one part of asphaltum to three or four parts of sawdust gives better results.

The tools used for mixing and packing the filling material are first moistened in crude oil.

All decayed material is cleaned out of the cavities down to sound wood before filling, just as is done when concrete is used for filling material.

When filling large cavities, oil-coated wire screen or metal for the outer surface adds to the good appearance and permanency of the job.

Asphaltum is sold and shipped in iron drums in large lots, and is retailed by many local hardware dealers.

The Strawberry for Me

By Mrs. Grace Clemons

THE first dollar I could spare from my chicken money, or earned by my own efforts, I determined to invest in strawberry plants.

My hopes were realized the spring of 1913 when I sent for 100 plants of the Senator Dunlap variety. I planted them in rows two feet apart, close to the windmill, for here in north central Kansas plenty of water must be within reach to insure good crops of strawberries.

In 1914 I picked 20 quarts from only a part of the patch. The lower end of the rows were frosted.

My sister bought 100 plants of the same variety at the same time. She had better soil and better success, and picked as high as seven quarts at a picking.

This year I have several hundred new plants rooted from runners to set out in a new patch.

We have set out a good many fruit trees in past years, but never have I picked 20 quarts of fruit from any or all of them the second year.

About Winter Rhubarb

By J. O. Hall

A FRIEND of mine has an unused stable cellar in which he has the hot-water heater for the greenhouse located close to the barn. This seems to be a royal chance for growing a lot of winter rhubarb.

With good clumps of roots ready to dig in late fall, he can grow a wonderful amount of excellent, brittle, and tender rhubarb stalks in a small space for winter sale.

I annually grow a full supply for several families from half a dozen clumps placed close together in a spot three by four feet under a greenhouse bench. Good strong roots are indispensable; if several years old, all the better.

The first thing, therefore, is to start a patch of rhubarb, setting the roots at least three feet apart each way, or two feet apart in very rich soil, in rows four feet apart. For best results the roots must not be dug for forcing until they are frozen solid and can be taken up with a good lump of dirt frozen to them.

Rhubarb is always in good demand, and it pays.

Burn Wilted Onions

By G. L. Turner

THE small light yellowish maggots which one sometimes finds on the roots of onions are the offspring of one of the several species of onion fly. In their larva stage they feed on the roots of onions, beans, and cabbages. They are widely distributed over the United States, and are often very destructive.

The entomologists may class this pest as the "imported onion maggot," "seed-corn maggot," the larva of the "black onion fly," or the "barred-winged onion fly."

As gardeners we group them under the one head, "onion maggot," and treat them all alike.

We find it a hard job to destroy the maggot when it has once found a safe retreat in the root of the plant, unless we pull up the plants that show a yellowish and sickly appearance and burn them with the worms they contain. This is the proper method where the infestation is not serious or general.

Our main aim must be to prevent the parent fly from laying its eggs on the base of the onions or the newly hatched maggot from entering the root or bulb of the plants. In smaller patches this may be done by moistening dry sand with kerosene, a cupful to the bucket of sand, and scattering this along the rows near the base of plants.

A carbolized form of kerosene emulsion is sometimes used with good effect. Boil one pound of soap in a gallon of water, and add one-half gallon of crude carbolic acid; then dilute this with 35 to 50 parts of water and apply about the stalks of the affected plants. It is important also to use clean methods of culture, especially to remove and destroy rubbish and onion remnants promptly, and to feed the plants well by using fertilizers freely.

Onions for Next Spring

By O. M. Thomas

I HAVE taken pains to bring my new method of growing choicest, sweetest green onions to the attention of progressive gardeners. Yet it is only now and then that I find this method in practice. Most gardeners still stick to the expensive, clumsy method of planting sets, either in fall or more often in spring.

Again I must urge my friends to try at least a little patch of the White Portugal (Silverskin). About August 1st sow seed rather thickly (an ounce to 150 feet of row) into very rich, clean, strong loam. Have the rows a foot apart, and keep free from weeds till the end of the season.

No winter protection is needed. These plants start into strong growth early in spring, and in May and June (long before you can expect to have green onions from sets planted in early spring) you will have the most delicious snow-white little onions imaginable. I have never failed for many years to have these green or bunching onions in great abundance every spring.

The Crow Blackbird—By F. Schuyler Mathews

SOME birds walk and do not hop—this is one.

You will notice that the robin either hops or intermittently runs, and the pigeon trots along rapidly, his little legs forever twinkling to enable him to capture some desired morsel.

The very movements of this blackbird, or bronze grackle, tell who he is. No other bird (except perhaps the crow) walks with such deliberate ease and swagger. He is in no hurry, he examines the ground attentively. He does not "listen" for worms and nervously yank them out of the ground like the robin, nor does he go hurriedly about pecking at everything in sight like the pigeon. He is a self-contained, self-satisfied bird with a somewhat conceited swing to his otherwise dignified tail.

You will know why he is called bronze when you see the sunshine on his back.

The bronze grackle has no song. Being a relative of the crow, his vocal efforts like that bird's are limited to a number of rasping, cracked tones which are characteristic of the tribe.

These birds arrive in February and remain as late as October. They nest commonly in evergreen trees.

A Living From Five Acres

JUST outside the town of Boulder, Colorado, is a hilltop from which one obtains a view which would be worth a fortune if it could be transported to New York or Chicago, where "view" is sold by the front foot.

Like most hilltops in the foothill region of Colorado, it has more view than soil—and there was a natural crop of stones which would fill an Iowa farmer with disgust.

Yet on that hilltop has been won a humble success in small farming which is worth the study of those pessimists who always say, "It is too good to be true."

Two years ago Miss Esther Reeks, an aged father, and an invalid brother faced life without a solution

Two years ago the Reeks family faced the problem of life without a solution. There were three in the family: Esther, her brother, and a father then in his seventy-fifth year. The doctors had prescribed an outdoor life for the brother—and when the doctors order that it usually means that the patient has lost the power to make an outdoor life bring in an income. That's one of life's little ironies. For all that, however, the Reeks family took stock of their resources and decided on "ranching." In Colorado everything is called a "ranch," from a ginseng bed to a township of alfalfa.

It may have been the last resort, for the Reeks family had had no experience in making a living from the soil. They had kept a few hens for the family supply of eggs, and some fried chicken in season, and they had raised a small garden for the table. When they "took stock" they found that they had $400, a dozen hens, and an old family horse. With this equipment they tackled "outdoor life" on the stony hilltop. Physically the view was magnificent. Financially the prospects were dubious—or would have been if it had not been for the simple possessions of industry, intelligence, and optimism.

Pay $12 a Month Rent

On the stony hilltop was a four-room house with a few small outbuildings, and attached thereto a five-acre tract, half of which was in alfalfa. The rent was $12 a month. In the distance was a magnificent valley in the midst of which nestles the prettiest town in the world, possessing 14,230 inhabitants—Boulder, Colorado. It was decided that the two and a half acres not in alfalfa must give the Reeks family a living.

In Japan the average farm is smaller than that, and the Japanese farms support large families—so reasoned the Reeks family, and fell to.

Young Mr. Reeks was not able to fall to when the time came to put the first good crop of vegetables on the market, so Miss Esther Reeks was obliged to assume the job of sales agent. Also she had to gather the crop, arrange it for the market, grade it, and make it attractive. To the brother who was ill and the sister who was obliged to perform a task for which she had not been trained, it looked a good deal like a failure. The view, however, remained as fine as ever, and inspired by the Colorado ozone and the sight of the town to be conquered, Miss Reeks fell to with a will.

Her first weapon was the telephone; and as long as the Reeks vegetables were in the market ahead of the others the telephone worked beautifully in the matter of securing orders. But not when competition waxed fierce. It soon became almost impossible to sell by telephone.

Peddle the Vegetables

Peddle? Now, I ask the girls who read this whether the work of peddling from house to house would look alluring to you. It did not allure Miss Esther Reeks a little bit, but there is often a lack of charm in life. We all have noticed that at times. Miss Reeks hated one thing worse than peddling, and that thing was failure.

Behold, then, Miss Reeks, early one morning, with a load of truck driving down the hill into Boulder!

Naturally she went first to her phone customers. They had heard her voice, and she had heard theirs, and it didn't seem quite so nervy to go to them for that reason. Some had regular sources of supply, and some had not; but they all liked her goods and her ways.

They say that women do not like to deal with women as well as with men, but it probably depends. Anyhow, Miss Reeks found that they liked it better in her case. "I knew," says Miss Reeks, "better what they wanted and how they wanted it than the average man." Soon she had a line of regular customers, and her sales were running from $25 to $40 a week. And even when winter came, there was still a market for eggs, butter, and some few vegetables—enough almost to pay expenses.

This seems like success right off the bat; but this was the second year. The first year they made scarcely enough to pay the rent, and really lived on their capital. Their capital was not excessive, you remember, and what there was of it was drawn upon heavily for the outfitting of the tiny "ranch." A hundred dollars for a cow; eighteen more for chickens and bees; fifty for moving, plowing, seeds, and implements. Just how they went through that first year has not yet been recorded. Probably they went through on the theory of the old lady who had always noticed that if she lived till the first of March she lived through the whole year.

Are Out of Debt

At the end of the second year the Reeks family are out of debt and possess a bank account. They have new implements which will make the work easier and more efficient in the future. They have a whole lot more experience, and that will assist even more than the implements. They have two cows, twice as many chickens as when they started, and three times as many bees.

Here are Miss Esther Reeks' rules for selling her goods from house to house:

1. Carry nothing but good goods. Have them carefully washed, arranged, and graded.
2. Always meet customers smilingly and courteously; never get out of humor; look for the bright side of every experience, and the interesting and amusing things about the work.
3. Always be neat and tasty in appearance. Untidiness in dress detracts from one's self-respect as well as from the respect of others.

Mighty good rules! After all, it is not strange that the Reeks family has found itself at the top of the hill. These rules are hilltop philosophy. They will always give the one who practices them a magnificent view.

Hard Work Brings Success

Hard work? Yes, for all the family; but that alone would not have brought this inspiring little success. They studied the experiences of their neighbors, the farm papers, college and government bulletins, and a book they made themselves.

They called it their "garden book," and they kept it from the first. It was an ordinary school composition book in which was set down the time of each planting, the variety and cost of seeds or plants, the time of marketing, price received, and total receipts.

Nothing is allowed to go to waste. The cows, pigs, and chickens consume the cull produce, and furnish manure for the little "ranch." The bees harvest a crop of honey from all the alfalfa for miles. The chickens help keep down insect and worm pests, and furnish eggs and meat. Vegetables which are unsalable and not good for stock—like cucumbers, cauliflower, green tomatoes, and broken bunches of celery—are made into pickles and relishes for sale in winter and early spring. Cottage cheese is a regular article of sale.

A really notable farm success and within the reach of anyone!

CAN any reader tell us about the old-fashioned "sugar peas" which were boiled and eaten in their pods? An Ohio reader asks about them. Only one person has been found who ever ate them.

MR. ABRAHAM HAHN, living near Taneytown, Maryland, had been sick for a long time and his farm work had not been done. On April 28th 14 three-horse teams started into a 30-acre field owned by him, and at 5 P. M. it was ready for the harrow. His neighbors had turned out and done his work. The percentage of warm hearts and happy breasts in that neighborhood is estimated to have been larger that night than ever in the history of the community.

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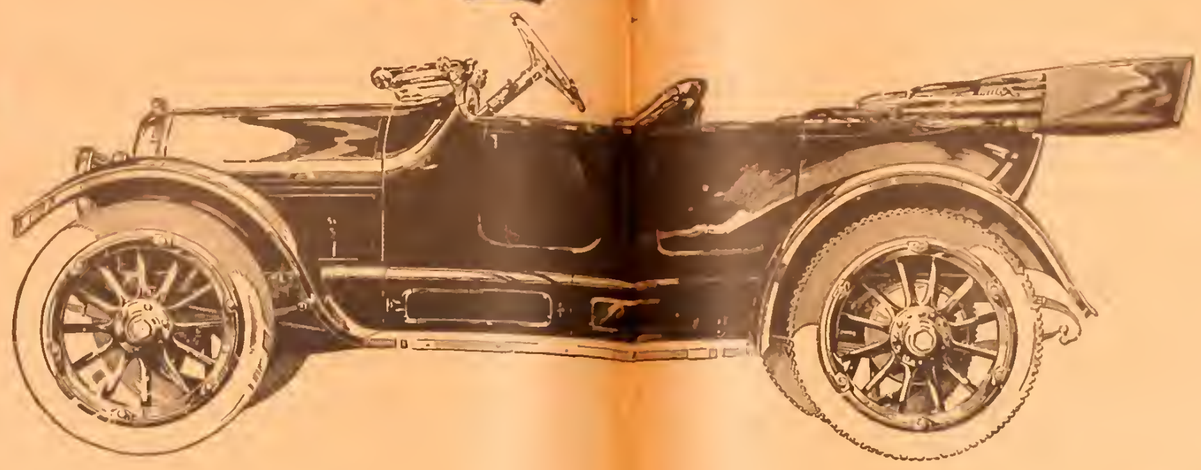
Roadster - $725

This is the largest 4-cylinder Overland that will be produced this year



$750

Model 83 f. o. b. Toledo

Roadster - $725

This is the largest 4-cylinder Overland that will be produced this year

The Newest Overland—$325 Less Than Last Year

THE 1916 Overland is in many particulars the same as the 1915 Overland—*the famous Model 80 that sold for $1075.*

But the price is $325 less.

The stream-line body is the *same* design as the $1075 model of last season.

It has the *same* magnificent finish; that deep, rich tone of dark Brewster green with fine hairline striping of clear ivory-white.

It has the *same* powerful, economical thirty-five horsepower, four-cylinder motor, *but weighs less.*

It has high-tension magneto ignition.

It has the *same* underslung rear springs. It has the convenient arrangement of electric control buttons on the steering column.

It has the *same* easy-working clutch which any woman can operate; the *same* "easy to handle" shifting levers; the *same* "easy to steer with" wheel; the *same* positive brakes.

It has 33" x 4" tires which is unusual on a car at this price.

In detail, finish, mechanical fineness, comforts and conveniences, this newest Overland gives you all there was in the $1075 Overland *and even more power.*

And it costs you but $750- *$325 less than last season's large 35 horsepower Overland.*

This car is on display at our dealers. Deliveries are being made now all over the country.

Every Overland dealer already has a waiting list.

Place your order immediately and you can be sure of a speedy delivery.

Specifications:

35 horsepower motor
High-tension magneto ignition
5-Bearing crankshaft
Thermo-syphon cooling

Underslung rear springs
33" x 4" tires; non-skid in rear
Demountable rims; with one extra
Electric starting and lighting system

Headlight dimmers
Rain-vision, ventilating type, built-in windshield
Instrument board on cowl dash

Left-hand drive, center control
One-man top; top cover
Magnetic speedometer

Handsome catalogue on request. Please address Dept. 62

BY INVITATION MEMBER OF

NEW YORK, U.S.A.

The Willys-Overland Company, Toledo, Ohio

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Change failure to success. Make *sure* of a "catch", a good stand and a big yield. Save money, seed, time and labor. Grow the *wonder crop*—the *best feed*, the *biggest money-maker;* at the same time, *enrich your soil.*

Inoculate Alfalfa, Clover and All Other Legumes with
The Improved German Soil Inoculator, Nobbe-Hiltner Process

NITRAGIN

TRADE MARK REG'D DEC. 6 1898 NO. 32212

PURE CULTURE

Gold Medal St. Louis 1904

The Simplest, Safest and Surest System of Soil Inoculation for All Legumes

"NITRAGIN" Pure Culture is packed in a *granular* medium (*not* a jelly) in ventilated tin cans, containing millions of surfaces supporting billions of nitrogen-gathering germs.

In half-acre, 1-acre and 5-acre cans

Remember, legumes without nitrogen-gathering germs take **no** nitrogen from the air.

Avoid imitations. Your seed is too costly to experiment with. "NITRAGIN" has proved its worth through years of good results in practical farm use.

Get the *original* Pure Culture—"NITRAGIN"—in the bronze-colored can, with the Armour oval label. The health, strength and vitality of the germs are **Guaranteed for Six Months by The Armour Fertilizer Works**

The guarantee is plainly printed on every can.

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ARMOUR FERTILIZER WORKS, Dept. 147

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$15.95 Upward ON TRIAL AMERICAN CREAM SEPARATOR

A SOLID PROPOSITION to send fully guaranteed, a new, well made, easy running, perfect skimming separator for $15.95. Skims warm or cold milk, making heavy or light cream. The bowl is a sanitary marvel; easily cleaned.

ABSOLUTELY ON APPROVAL

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GALLOWAY QUALITY MAINTAINED

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DON'T BUY A SEPARATOR until you FIRST get our new separator book and complete, new, low, CUT AND SLASHED PRICES! Shipped from Chicago, Waterloo, Minneapolis, Kansas City, Council Bluffs and Spokane.

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One Year to Pay!

$24 Buys the New Butterfly Jr. No. 2. Light running, easy cleaning, close skimming, durable. Guaranteed a lifetime. Skims 95 quarts per hour. Made also in four larger sizes up to 5 1-2 shown here.

30 Days' Free Trial Earns its own cost and more by what it saves in cream. Postal brings Free catalog, folder and "direct-from-factory" offer. Buy from the manufacturer and save half.

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Good Bye Mr. Louse!

No more dipping or spraying. Keep your herd healthy and free from vermin and parasites with a

National Automatic HOG OILER

Works like magic. Strong, durable and simple. Can't get out of order. Price only $7.50. *Thirty days' trial.* Satisfaction or money back. If your dealer will not supply you do not accept a substitute but *write to*

National Factories, Inc. Dept. C., Richmond, Ind.

Write, Phone or Wire!

WE have the stock and can make immediate shipment, enabling you to preserve 100 per cent of your corn crop in the

INDIANA SILO

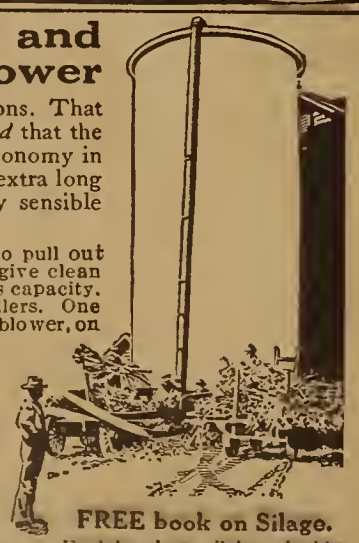
Easy to erect. No special tools or skilled labor needed. Every stave guaranteed. You pay for the Indiana Silo out of what it saves on feed bill. Address nearest office.

THE INDIANA SILO CO.
Anderson, Ind. Des Moines, Iowa
Kansas City, Mo. Ft. Worth, Texas

Guaranteed to do more and better work with less power

than any other silo filler operating under equal conditions. That guarantee is based on what repeated tests have *proved* that the Appleton Silo Filler will *do*. By its efficiency and economy in use, its positive safeguards against breakdowns and its extra long life; the Appleton proves that *service-cost* is the only sensible basis on which to choose a silo filler.

Solid oak frame, braced, bolted and mortised; impossible to pull out of line. Special high-grade tool steel knives, spiraled to give clean shearing cut. 10 lengths of cut, 5-16 to 2½ inches Tremendous capacity. Positive frictionless self feed table runs on chilled iron rollers. One lever controls feed rolls and table. Independent belt driven blower, on



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has speed adjustable to minimum use of power for any height silo. Lowdown, cut-under frame; easy to handle. Send for catalog of details showing 4 sizes.

FREE book on Silage. Explains how siloing doubles feed values of crops; describes all types of silos, how built, etc.; full of silage and silo facts of real value. Sent free—write!

Appleton Manufacturing Co., 409 Fargo St., Batavia, Ill.

Crops and Soils

The West Suits Me

By W. F. Wilcox

IT IS a pleasure for me to go out to my fields on the hot scorching midsummer day and, with an irrigation shovel over my shoulder, play the rain god. By a turn of the wrist I can send the water coursing down through the grain, giving it the moisture needed to produce a gigantic yield. Later in the day, to stand with the field between me and the slanting rays of the sun and watch the glistening water trickling along a hundred rows through the field is a sight to make the heart rejoice.

The price of irrigated land sometimes appals the Easterner, and yet he should expect high values. The water which is brought down from the snow banks of the high mountain peaks costs money. It costs money to build the miles and miles of canals, the tunnels, the flumes, the reservoirs and dams, and to keep them in repair. And yet the sure crops, the big yields, and the security of irrigation farming makes possible the payment of high acre prices. The amount of irrigation water is limited; the acreage of irrigated land is limited; the demand for irrigated land is great, and no one can tell what the maximum price will be when people realize generally what irrigation farming means.

It is a pleasure, on a hot summer day, to play the rain god

Stacked Grain Pays Best

GRAIN that is left in the shock while waiting for the thresher very often becomes moldy. That causes loss. Birds, mice, and floods also come in for their toll. As a result the grain when it goes to the market grades low. The grower gets a low price. That is his punishment.

Moore, of Wisconsin, says that fully ten per cent of the value of the grain crop of that State is lost each year because of the wasteful practice of threshing from the shock.

When grain is protected by storage in barns or stacks it goes through the natural sweating processes, and so does not heat and get musty when stored in deep bins after threshing. To be in the best condition for market or storage the grain should be in the stack for three or four weeks before threshing.

The Shallow Earth Mulch

THE so-called "dust mulch"—we prefer to call it an earth mulch, since it is not really dust, but granulated earth—is a thing to study. It is the only practical agency by which we can fight dry weather. If we could only mulch our fields with straw we might not need the earth mulch, but we cannot. The soil is there, however, and the cultivator will turn it into a porous mulch, which if it is kept in the proper condition will lie like a blanket between the water in the soil and the dry air and keep the root bed moist.

How deep should it be? Professor Keitt of South Carolina thinks two or three inches of really dry soil will form an efficient mulch. Sand mulches, he thinks, may be shallower than those needed in clay soils.

It is no doubt true that what will be effective in one soil will not be so in another. We believe that in deep soils four inches is shallow enough. There is plenty of rich soil below that depth for the roots, and much more effective work can be done with tools working to a depth of four inches than where the attempt is made to make the cultivation too shallow. Many a man, misled by the word "shallow," tries to conserve moisture with a thin body of dust.

Many of us are not aware of the fact that a crust will often form under a shallow earth mulch. In times and places of severe drought the man pinning his faith in shallow cultivation and the earth mulch should watch carefully the top of the firm ground right under the mulch. If it becomes crusted he should add an inch or two to the mulch.

Frequent shallow cultivation is the thing that gives the earth mulch. What is shallow cultivation? Well, measure the four-inch mulch and you will find that it is after all shallow as compared with the average cut of the large cultivator shovel. The same blanket of soil should be moved at every cultivation, and stirred well after rain.

Successful Alfalfa

By R. F. Fore

THIS is my method of growing alfalfa. I put the ground in oats in the spring, which helps to exterminate the weeds. I break the ground as soon as possible after harvest, and harrow it after every rain until the last week in August. I then inoculate the ground from an old alfalfa field, then harrow it, and sow 15 pounds of seed per acre. Then I harrow again.

I use no lime or commercial fertilizer, for I have limestone soil.

I have four acres of alfalfa, which have been sown five years. They yielded 15 tons of hay last year. I have six acres which were sown last August. I got a fine stand, excepting where the heavy rains washed it out. It stood the winter fine. As a rule I sow in the fall.

Mowing Kills Weeds

By C. R. Weidle

I HAVE learned from experience that clipping permanent pasture grasses once each season improves the pasture considerably. After seeding a piece of land to permanent pasture about seven years ago, and not clipping it for a couple of seasons, I found a number of varieties of weeds springing up and going to seed during the summer.

To remedy this trouble I tried running a mowing machine with the knife bar set rather high over the field during the fore part of July before the weeds had a chance to go to seed. Cutting the weeds at this time of year ended the weed problem all summer. Since then I have mowed this pasture each season to kill weeds and for pasture improvements.

I have learned that clipping the uneaten pasture grasses invigorates new growth and makes the pasture look green again.

Unless clipped off, the grasses which commence to get dormant greatly hinder the root growth from sending up new shoots or blades of grass. Clipping especially helps blue grass.

I figure the time with man and team well spent in clipping my 10 acres of pasture each season, as it requires only about a day with a 6-foot mower.

W

Live Stock and Dairy

How to Make Troughs

By H. Colin Campbell

LOSSES from hog cholera, and the foot-and-mouth disease last year caused me to discard the old insanitary wood watering troughs on my farm. I desired troughs permanent and durable as well as sanitary. Concrete troughs met this need.

A sack of cement, two cubic feet of clean, well-graded sand, and three cubic feet of gravel, clean and well graded, were the proportions in which the materials were mixed to use in the construction of the troughs. The sand ranged in size from small particles to particles one-fourth inch in diameter. The gravel ranged in size from one-fourth inch to one inch in the greatest dimension.

Doubtless others have had as much experience in this as have I, perhaps more; but I have some simple methods which nearly do away with the expense of molds. In the accompanying sketch, which will help my explanation, A shows a portion of the trough made by using the mold B, which consists of boards as high as the trough. Stakes were driven into the ground to hold the sides in place. In using this type of mold a pallet or bottom board may be used but is not absolutely necessary, as the work can be done on the ground.

The first trough I built was formed partly by shaping a clay core, such as shown in the accompanying sketch. I cast this trough upside down as suggested by the sketch. When placing the clay core I was careful to build it up to the desired size, and shape it by a template such as shown at F. In placing the concrete I was careful not to disturb the clay so as to make the inside surface of the trough irregular. Inner surfaces of molds, cores, and pallets of wood should be well greased with a mixture of equal parts of raw linseed oil and kerosene before placing concrete.

If you want a concrete trough to be water-tight you must use well-graded materials and enough water in mixing them to form a "quaky" consistency. You must remember that sometimes water may freeze in a trough, and unless the concrete is reinforced the expansion of ice will cause the concrete to crack.

It Should Hold Water

I took no chances and put ¼-inch rods and chicken wire in the concrete, as shown in sketch C. I was so well pleased with this first attempt that it occurred to me to use wood molds or forms throughout in constructing a second one, which was done after the manner shown in sketch D. In both cases when the mold had been filled the top (which was the bottom of the finished trough) was leveled by a straightedge.

E shows a mold for making the trough right side up. After placing concrete for the bottom of the trough the sides were roughly formed by plastering concrete on the sides of the mold with a trowel. Final shaping of the top and inside of the trough is effected by use of the template as shown.

Troughs should be reinforced with ¼-inch round rods placed four inches apart, or wire mesh similar to poultry netting. If troughs are to be moved from place to place, both kinds of reinforcement should be used.

The mold may be removed the third day, and the trough will be ready for use in from ten days to two weeks, depending upon the weather. During this time the trough should be covered with wet straw or burlap to prevent the concrete from drying out too rapidly. Otherwise the concrete will crumble and disintegrate, no matter how carefully you select and proportion your materials.

A one-bag batch of concrete, mixed as I have recommended, will be sufficient to make a trough 12 inches wide, 10 inches high, and 6 feet long. The total expense of such a trough, properly reinforced, should not exceed one dollar, exclusive of labor. The gravel and sand came from my farm.

Hard Milkers Made Easy

By J. C. Lampman

I HAVE found that hard-milking cows will influence this quality in their daughters. Here is the way, however, to overcome this defect without danger to the cows.

Take a quill from a small breed of chickens. Sterilize by boiling thoroughly. Dip the quill in pure carbolized vaseline. Then carefully insert the quill in the teat orifice and leave until the next milking. The quill should be inserted about an inch, and an equal length left outside with which to pull it out easily. It is seldom necessary to use the quill again.

Another serious teat trouble is "spider teat." My treatment for spider teat is to make a mixture of one teaspoonful of carbolic acid and two teaspoonfuls of olive oil. When the first spattering is noticed, apply spirits of camphor liberally to the end of the affected teat. Then apply the carbolic-acid olive-oil mixture, after shaking, to the end of the teat after milking, and several times between milkings, making sure to soak the end of the teat well in the carbolized oil each time.

Beef in the Corn Belt

ON PAGE 3 is an article on the future of the beef and dairy interests of the South. This future is wrapped up in the eradication of the cattle tick, a work which is going on so rapidly that some day it will make the corn-belt farmer's head swim. When the tick ceases to trouble, the South will be able to grow beef in enormous quantities.

On the medium-priced to cheap lands of the South we shall find the older, simpler sort of a beef industry growing up. Steers will be marketed at two, three, or four years of age.

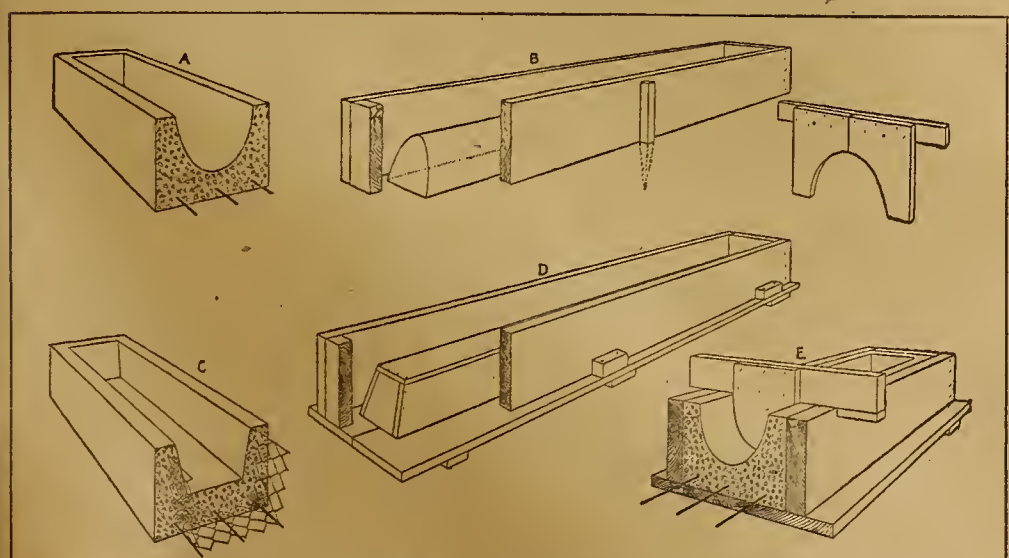
Even now the corn-belt farmer cannot on his high-priced land produce such beef at anything but a loss, but some men are making money on calves sold as baby beef. These calves suckle their dams for six months, and where the cows are good milkers two may suckle the same cow. There seems to be no good reason why a cow may not take on a second calf when the first is ready to wean, if the breeding is planned for this. Certainly every sort of economy must be put in effect, and the cows made to earn their board every minute.

When the calves are weaned they are put on a carefully planned ration so as never to lose their "baby fat." They must be sold at the age of from a year to a year and a half, weighing from 800 to 1,200 pounds.

These calves will not finish at this early age unless they are beef-bred. Scrubs will never do. The mothers should be good beef grades at least, and the sires pure-breds.

Baby beeves are fed only during the months in which they put on the cheapest and most rapid gains. Such husbandry will enable the corn-belt farmer to make money, all things considered, on beef.

There seems to be no other way.



For an expense of not to exceed $10 a permanent concrete trough can be made by using the molds here pictured

EW

You need a new
DE LAVAL
SEPARATOR
NOW

1st If you are still using some gravity or setting process of creaming—

BECAUSE YOUR WASTE IS greatest and quality of product poorest in mid-summer when the milk supply is heaviest.

BECAUSE TIME IS OF GREATest value on the farm at this season and the time and labor saving of the good separator counts for most.

BECAUSE THE SKIM-MILK IS poorest without a separator in hot weather and often more harmful than helpful to calves.

BECAUSE THE WORK OF AN improved De Laval Cream Separator is as perfect and its product as superior with one kind of weather as with another.

2nd If you have a very old De Laval or an inferior separator of any kind—

BECAUSE THE LOSSES OF the poor separator from incomplete skimming and the tainted product of the hard-to-clean and insanitary separator are greatest at this season.

BECAUSE OF THE GREAT economy of time at this season in having a separator of ample capacity to do the work so much more quickly.

BECAUSE AN IMPROVED DE Laval is so much simpler and more easily handled and cared for than any other, and you cannot afford to waste time these busy days "fussing" with a machine that ought to have been thrown on the junk-pile long ago.

BECAUSE THE DE LAVAL SEParator of to-day is just as superior to other separators as the best of other separators to gravity setting, and every feature of De Laval superiority counts for most during the hot summer months.

These are all facts every De Laval local agent is glad of the opportunity to prove to any prospective buyer. If you don't know the nearest De Laval agency simply write the nearest main office, as below.

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50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

World's highest Silo
easily filled with
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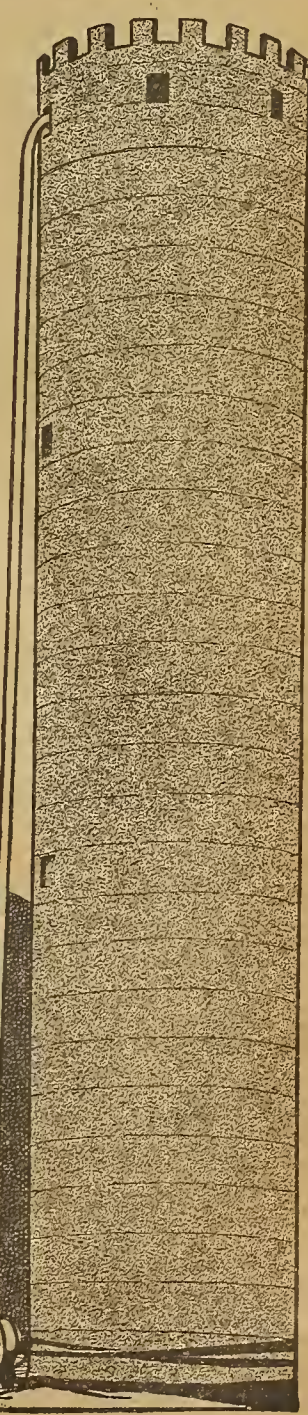

Silos keep going higher, but never too high to be filled with a Blizzard. The silo in the picture is almost 100 ft. high—the elevating height is 93 ft.—and a No. 13 Blizzard does the work easily. The big silo is on the farm of Allie Christ, Seven Mile, Ohio.

The Blizzard is light-running. Your regular farm engine will run it. It has an enormous appetite. Makes you hustle to keep it fed. Self-feed table saves one man's work. Simple, easy to run, absolutely safe. Cuts evenly—runs day-in-day-out without a hitch—costs little or nothing for repairs—many still in use after 10, 12, and 14 years service.

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—get the whole story of what the Blizzard can do for you.

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to be absolutely sure that your blacksmith uses genuine "Capewell" nails. Then the shoes will be held securely. There'll be no needless breaking down of hoof tissue as the nails are being driven. The hoof of a valuable horse will not be weakened, nor the foot injured. "Capewell" nails are the best in the world—not cheapest regardless of quality. The Trade Mark is on each nail head. Look for it!

THIS CHECKED HEAD OUR TRADE MARK

Lightning Can't Strike if Illustrated Book on Lightning Free. Explains kind of rods that protect. W. C. SHINN, 155 N. 16th St. Lincoln, Neb.

Shinn Gets There First

The Auto-oiled Aermotor.

The windmill that wears a hat.
With one feed of oil for a year it will toil.
A gentle breeze will whirl it—a gentle pull will furl it.
DUPLICATE GEARS RUNNING IN OIL
OIL Annually
EVERY BEARING FLOODED WITH OIL
This Aermotor is more than great—its gears are balanced in duplicate.
In any breeze it leads with ease.
Oils itself, pumps the water, just exactly as it oughter.
No climbing of towers in ours
Built to shed the dust and rains.
Built to stand the windy strains.
With its hat on its head, its oil in its pocket, it's a charm to the farm, and no one can knock it.
Aermotor Co., 1146 Campbell Ave., Chicago
Cut out and show your dealer.
A pull of 30 lbs. on this wire furls mill.

Bale More Tons

CASE Hay Presses will last longer than any presses made and do very best work. Require 2 less men when equipped with CASE Hay Fork.

CASE Hay Presses

Two sizes—14 in. x 18 in. (3½ to 5 tons) and 17 in. x 22 in. (4 to 6 tons). Tremendously strong and durable. Simple and safe to operate. Mail postcard for Baling Press Catalog and prices.

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Dept. 823, Racine, Wis.

Poultry-Raising

A Drone Hen

THIS hen laid only 78 eggs during a full year after her first egg was produced.

Her full sister laid 203 eggs in her pullet year, beginning when four months and five days old. Several other sisters did nearly as well.

Her mother has a record of 219 eggs, and her father is fully as well bred for heavy egg-production qualities.

This drone hen was hatched March 14,

She looks fine, but she doesn't lay

1913, and when mature weighed 7 pounds and 3 ounces. She is normal in every way except she refuses to lay well.

Her first egg was laid December 17, 1913, when nine months old. She began to molt the following October, and laid no more until the spring of 1914.

She scored 93½ points in a leading New England poultry show.

They Must Have Scratched

F. M. SACKETT of Stevens Point, Wisconsin, had a garden. His neighbor, H. K. West, had chickens. The gardener charged the chickens with ravaging his beds. The poultryman refused to believe in his fowls' guilt. One day the chickens came home dangling from their beaks cards on which were such confessions as this: "I have scratched in Mr. Sackett's garden." To the cards were attached fine silk threads to the other end of which were fastened kernels of corn from Mr. Sackett's garden!

CABBAGE, cauliflower, radishes, and the like can be saved from the flea beetles that eat the leaves full of holes by dusting the plants with a mixture of one teaspoonful of kerosene or two teaspoonfuls of finely pulverized moth balls for each pint of sifted wood ashes or slaked lime.

No Hens, No Brooders

By M. Kennedy

I PLAN to have anywhere from 30 to 50 chicks hatch at a time, and as soon as they are nicely straightened up—in ten or twelve hours after hatching—I remove them from the nest and put them into cheese boxes with chaff in the bottom.

If it is cool I take the boxes into the kitchen, and as long as they are contented I leave them uncovered. If they are not, I throw an old flannel cloth or burlap sack over the box, leaving an air space on one side and letting the cloth drop down on their backs to prevent their crowding. If the weather is warm the box is put out of doors with a cellar sash over one side and cloth over the other.

I feed and water in this box for two or three days and then transfer to boxes 3x6 feet, with one side and two ends tight and whole front of screen. The front is arranged so that a couple of six-light window sashes can be slipped in behind the screen.

Anywhere from 50 to 60 chicks can be successfully kept in here for the first two weeks, putting them to bed in the cheese boxes at night, not more than 30 chicks in a box. The chaff should be quite deep, and be changed often.

If it turns very cold, a lighted lantern with a piece of wire screen around it, or a jug of hot water with a bag wrapped around it, makes the box cozy as can be.

When the chicks are two weeks old I turn them out in 4x6-foot pens with wire screen sides and poultry-netting top, moving the pens onto new ground each night.

At night the chicks from each pen go into square coops with fronts of wire screen and a burlap curtain which can be dropped in front. These have no floor, and care must be taken to set them level so weasels and rodents cannot get in. The last thing at night I visit the coops, and if the chicks are piling up I throw an old piece of carpet over the coop, or if they show signs of heat I raise the burlap curtain a little.

The chicks remain in these yards till fully feathered and big enough to tell the cockerels from the pullets. At that time the cockerels are put in a big yard and the pullets are given free range. By this method they are safe from rats, cats, hawks, and storms, and I can attend to a whole penful as easily as I can care for an old hen and 20 chicks. This has cut my losses down so that instead of a 30 or 50 per-cent loss, less than 4 per cent is the rule.

Six Hens and Profit

IN a recent issue of FARM AND FIRESIDE I saw the query, "Can I Make a Few Chickens Pay Their Way on a Town Lot?" asked by S. H. Bailey.

I was situated about the same as Mr. S. H. Bailey. The place to house the chickens did not cost me anything, and their yard was no larger than a town lot. I was a beginner, and stocked up April 13, 1914, with one third the number of hens of mixed breeding. Feed here in the East is very expensive, but also the valuation of chickens is more than Mr. Bailey places on his. My account for one year stands as follows:

RECEIPTS

Eggs and chickens sold and eaten during year	$40.98
38 hens on hand @ $1 each	38.00
3 roosters on hand	8.00
Feed on hand April 13, 1915	3.00
Total resources	$89.98

EXPENSES

Investment, 6 hens	$5.50	
Feed and eggs for settings	28.83	
Total expense for year		34.33
Balance		$55.65

RACHAEL CARL, Connecticut.

Not Money-Makers

THE bird in the first picture is the one pictured on our cover over two years ago. It is a cross between a Brown Leghorn cock and a Pearl Guinea hen.

The other is half Barred Rock and half Pearl Guinea. Its mother was the Guinea.

The first came from Kentucky, the second from Virginia. Both were males. Neither of them would breed.

This bird had a bad disposition. It was a Leghorn-Guinea cross

This bird was tough even after six hours' cooking. It was a Rock-Guinea cross

They were very wild and would bite savagely on slight provocation.

No. 1, when well cooked, tasted something like chicken, but was not quite so tender. There was a pronounced game flavor.

No. 2 was three years old and very fat when killed. After six hours' boiling, the flesh was still tough and stringy. We can't commend this feathered "mule" as a money-maker.

Conceded Supremacy

For 29 years Ann Arbor Press owners have beaten every efficiency record. For good speed, big capacity, neat baling, economy and reliability no other press owner attempts to compete with the owner of an

Ann Arbor
"THE BALER FOR BUSINESS"

All admit its superiority. It bales any kind of hay or straw. Uses *any* standard engine—Get the *conceded leader*—Send for "Making Money from Hay" and catalog.

Ann Arbor Machine Co.
64 Broadway
Ann Arbor, Mich.

LOOK! $99 Buys This Improved 1000 Bu Competitor Bin

The Northfield Bin And Comb. Corn Crib

Costs less than 9 cents per bu. delivered to your station. The COMPETITOR is the heaviest and best made moderate priced granary on the market. Write for folder. Don't be a dumper. Prices are usually lowest at harvest time. 10c per bu. rise pays for this granary. Don't let the speculators make all the easy money. Get a fire and rat proof metal granary and store your crop in perfect safety for full market value. The good old reliable Northfield still stands at the head for efficiency and substantiability. The most thoroughly ventilated and best made portable, sectional, metal granary. Thousands in use. All giving perfect satisfaction. Sheet metal used in the Northfield is nearly twice as thick as ordinary. Samples free. The 1,000 bu. Northfield costs less than 8c per bu. Absolutely rain, snow, bird, vermin, wind, mildew, rust and fire proof. Internal ventilator dries out dampest corn housed. Easily and quickly set up. Write for new catalog. Free.
Northfield Iron Co., 176 Nico Bldg. Northfield, Minn.

ABSORBINE
TRADE MARK REG. U.S. PAT. OFF.

Removes Bursal Enlargements, Thickened, Swollen Tissues, Curbs, Filled Tendons, Soreness from any Bruise or Strain; Stops Spavin Lameness. Allays pain. Does not Blister, remove the hair or lay up the horse. $2.00 a bottle, delivered. Book 1 K free.

W. F. YOUNG, P. O. F., 284 Temple St., Springfield, Mass.

Shetland Ponies—3 and 4 year olds, $150. Weanlings, $50.
HARTZELL BROS., Established 1883, SEBRING, OHIO

MAGAZINES WITH FARM AND FIRESIDE

By special arrangement with several of the most prominent magazines in America, you can get any one of these periodicals for a year with Farm and Fireside as explained below.

Farm and Fireside, 1 year, regular price 50c
To-day's Magazine, 1 year, regular price 50c
Both for 60c

To-day's Magazine has been termed the one necessary woman's paper. This title seems quite appropriate because To-day's contains a valuable amount of important information which is both instructive and entertaining. The stories are wholesome and interesting. The fashions and hints on dress are up-to-date and sensible.

Farm and Fireside, one year, regular price 50c
Woman's World, one year, regular price 35c
Both for 50c

The Woman's World is one of the best magazines printed for the money; in fact, is superior to many magazines selling for more than this. It is not only attractive in appearance, but its columns are full of the choicest literature that money can buy. It is a big value at a low price. Every farmer in the country should take this opportunity of obtaining the Woman's World without cost in connection with FARM AND FIRESIDE.

Farm and Fireside
The Housewife
For One Whole Year
Both for 60c

The Housewife is a bright, entertaining monthly magazine containing many wholesome serials and short stories and articles of unquestioned merit. It is a magazine that a woman looks forward to receiving each month. It is well illustrated with the work of the best-known artists. The Housewife is edited by Lilian Dynevor Rice.

ORDER TO-DAY
Farm and Fireside, Springfield, O.

Your Questions

Will You Pay the Price?

Query: I am hesitating between taking a homestead in western Canada or buying some Texas school land at $1.50 to $5 per acre, on very easy terms. Which would be the wise course for a man with a small capital? J. M. E., Indiana.

Answer: It might be wiser to stay in Indiana than to go to either place. Texas is a big State. Cut the map of Texas from a map of the United States and revolve it on a pin stuck in its northeast corner, and the southwest corner will touch West Virginia. In other words, Texas is an empire. Doubtless there are excellent locations in Texas, but a man is very foolish who decides on any location without making a careful study of the ground. This is also true of western Canada. The homestead lands there are generally far from the railroad, but they offer an opportunity for the man who is adapted to that sort of pioneering.

There are no good homesteads left in the United States, and lands selling at from $1.50 to $5 per acre must have something the matter with them. All things considered, they are probably no cheaper than Indiana land at its selling price. If cheap lands are not paid for in money they must be paid for in labor or hardship if they are productive lands. The thing for J. M. E. to decide is, "Am I willing to pay the price in hardship, isolation, and the like?" This is a question which every man must decide for himself.

Getting Wine From Flowers

Query: Can you tell me how to make wine from peony blossoms?
WILLARD BURROUGHS, New Jersey.

Answer: The exercise of expert knowledge is necessary for success in making wines from flowers or aromatic plants. The operation usually consists of infusing a sufficient quantity of bruised ingredients for a few days into any simple wine prepared from sugar, honey, raisins, etc., and after the active fermentation is complete the material is racked off and bottled. The person making wine should know definitely before hand just what alcoholic strength and flavor of wine is desirable. As to peony blossom wine we have no information. Have any of our readers had any experience in that particular line?

Tobacco Stalks as Fertilizer

Query: What fertilizing elements are contained in tobacco stalks, and what would be necessary to add to them to make a complete fertilizer? H. M. B., Ohio.

Answer: Tobacco stems contain all the elements to make a complete fertilizer, but in an unbalanced proportion. For such crops as tobacco, cotton, potatoes, and vegetables a fertilizer analyzing three or four of nitrogen, six to eight parts of phosphoric acid, and eight to ten of potash will give good results. In general, we should say that from 1,500 pounds to a ton of tobacco stems to the acre, supplemented by 100 pounds nitrate of soda, 300 pounds acid phosphate, and 80 pounds of sulphate of potash will give good results for any of the crops mentioned.

This application would be considered too heavy for corn, wheat, or small grains on ordinary soils.

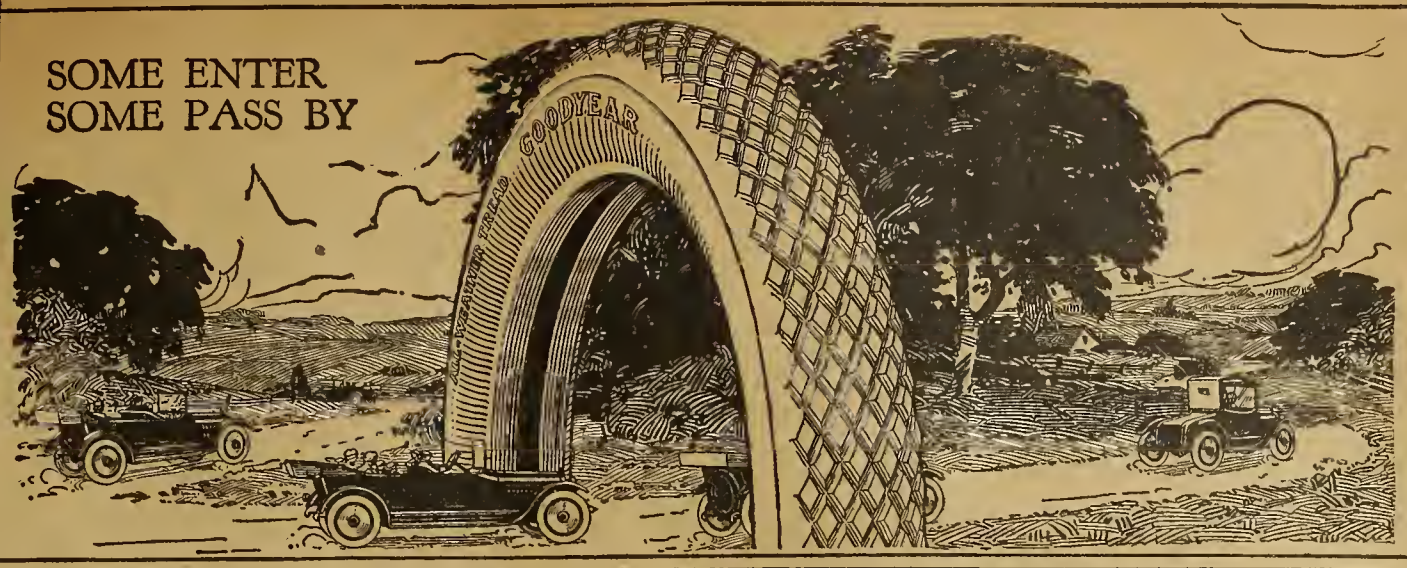
Potatoes Need Nitrogen

Query: Having read your valuable paper for many years, I wish to ask a question. Last year I grew a big crop of field peas on an old potato patch, mowed and hauled off the vines, and disked under what was left, intending to plant potatoes this year. It is volcanic soil and rich in mineral matter. Do you think the extra nitrogen produced by the pea vines will be too much for the potato crop? The patch has been worked for twenty years, chiefly in growing potatoes. F. H. J., Colorado.

Answer: The practice in the best producing potato regions is to use a commercial fertilizer analyzing four per cent nitrogen, six per cent phosphoric acid, and ten per cent potash. Potatoes therefore will stand a good deal of nitrogen. There is no probability that this soil contains too much nitrogen for the crop. As a matter of fact, where cowpeas or other legumes are removed from the land there is little if any nitrogen added to the soil. The only way to make a legume crop actually add much to the nitrogen content of the soil is to plow it under.

Probably our correspondent's soil is no richer in nitrogen than before he grew his crop of cowpeas.

W



A $500,000 Gift
To Users of Fortified Tires

This is an actual gift, as these facts show:

Nobody asked for better tires than Goodyear built last year. Nobody thought them possible. They were so extra-good that for years they've outsold any other tire.

And this year—on February 1st—we gave you another big price reduction. It will save Goodyear users about $5,000,000 this year. It was our third reduction in two years, totaling 45 per cent.

This Year's Extras

Yet, despite this reduction, we have added new improvements which will cost us $500,000 this year. Part are in extra rubber—all in extra wear.

We have added these extras to the best tires built. To tires that dominate because of super-service. And we've done it at a time when price reductions have led to considerable skimping.

Total, $1,635,000

All the extras we give you in Goodyear tires will cost us $1,635,000 this year, judged by current output. These include five features which no other maker uses. It includes other uncommon features.

We could omit all these, yet build a tire which looks about like Goodyears. It would serve as well as many rival tires. Thus we could add to this year's profits $1,635,000.

Tires Not Alike

It's a vast mistake to think that tires are pretty near alike. Five of the greatest features known are found in Fortified Tires alone. And many a tire lacks all the extras that we cite.

These extras combat rim-cutting, blowouts, loose treads. They combat punctures and skidding. They mean a secure tire. They mean more rubber, more fabric than some. They mean more mileage, less trouble, less expense.

We pay the price to give you these extras, and save it by mammoth output. You should insist on them. Any dealer, if you ask him, will supply you Goodyear tires.

GOODYEAR
AKRON, OHIO
Fortified Tires

Fortified Against:
- Rim-Cuts—by our No-Rim-Cut feature.
- Blowouts—by our "On-Air" cure.
- Loose Treads—by many rubber rivets.
- Insecurity—by 126 braided piano wires.
- Punctures and Skidding—by our double-thick All-Weather tread.

THE GOODYEAR TIRE & RUBBER CO., AKRON, OHIO
Makers of Goodyear "Tire Saver" Accessories; also Goodyear "Wing" Carriage Tires and other Types
(2424)

GET A WATCH AND FOB

HERE IS A CHANCE to obtain a handsome and useful watch and a fine leather fob with a gilt metal charm. FARM AND FIRESIDE guarantees that this fine watch will please you.

DESCRIPTION: This watch has a handsome nickel case, with open face. It is a stem-wind and a stem-set, just like other high-priced watches. It has a close-fitted snap back. It is only ⅜ inch in thickness. It is a perfect timekeeper, tested and regulated before leaving the factory. It is engraved front and back, and is a watch of which anyone would be proud.

The Fob is of handsome black leather with a polished buckle, like illustration, with a rich gilt charm handsomely engraved.

MOVEMENT: Regular 16 size. Lantern pinion (smallest made). American lever escapement, polished spring. Weight, complete, with case, 3 ounces. Quick train, 240 beats to the minute. Short wind, runs 30 to 36 hours with one winding.

Act Quick

Every watch is fully guaranteed by the manufacturers and by FARM AND FIRESIDE.

The manufacturers will make all repairs for a year free, as explained on the guarantee.

How to Get the Watch

You can get this dandy watch and fob very easily. Write a postal card to the Watch Man. Tell him you want to get this watch and fob without spending one penny. He will be glad to help you get your watch. This is a chance you must not overlook.

Thousands of delighted men and boys have secured their watches this way with the help of the Watch Man. You can do it, too. Any one that really wants a watch can easily do the little task that we require. Just send your name and address to the below address. To-day is the time to act.

Write a Postal To-day to THE WATCH MAN
FARM AND FIRESIDE, Springfield, Ohio

A LITTLE THING

Changes the Home Feeling.

Coffee drives out the sunshine from many a home by making the mother, or some other member of the household, dyspeptic, nervous and irritable. There are thousands of cases where the proof is undeniable. Here is one.

"I was taught to drink coffee at an early age, and later became a victim to headaches, and as I grew to womanhood these headaches became a part of me, as I was scarcely ever free from them.

"About five years ago a friend urged me to try Postum. I made the trial and the result was so satisfactory that we have used it ever since.

"My husband and little daughter were subject to bilious attacks, but they have both been entirely free from them since we began using Postum instead of coffee. I no longer have headaches and my health is good."

If some of these nervous, tired, irritable women would only leave off coffee absolutely and try Postum they would find a wonderful change in their life. It would then be filled with sunshine and happiness rather than weariness and discontent. And think what an effect it would have on the family, for the mood of the mother is largely responsible for the temper of the children.

Name given by Postum Co., Battle Creek, Mich. Read "The Road to Wellville," in pkgs.

Postum comes in two forms:

Postum Cereal—the original form—must be well boiled. 15c and 25c packages.

Instant Postum—a soluble powder—dissolves quickly in a cup of hot water and, with cream and sugar, makes a delicious beverage **instantly**. 30c and 50c tins.

Both kinds are equally delicious and cost about the same per cup.

"There's a Reason" for Postum.

—sold by Grocers.

Give that roof a coat of Everjet

IF the roof is *new* it will last *twice* as long; if it's *old* it will add greatly to its life. Everjet is a black carbon paint that does not crack, peel or scale. Best for every use on the farm. *Booklet free.*

BARRETT MANUFACTURING CO.

New York, St. Louis, Cleveland, Chicago, Pittsburgh, Minneapolis, Detroit, Philadelphia, Cincinnati, Seattle, Salt Lake City, Boston, Kansas City, Birmingham

One Penny For a DOLLAR-SAVING Book

Gives valuable *fence facts*—shows how to get *better quality* at sensational direct-from-factory prices.

EMPIRE FENCE

is *guaranteed* to show the *biggest saving* on *highest quality* fence. *Freight prepaid.* All Big No. 9 wires, Open-Hearth steel, heavily galvanized, rust proof, pig tight, stock strong. Just a penny postal brings *Free Book*—NOW.

BOND STEEL POST CO., 42 Maumee St., Adrian, Mich.

Every farmer wants the paint which at lowest cost gives greatest protection and longest wear. The paint business was revolutionized by the introduction of

Zinc

Zinc put a new value into the old paint mixtures.

Write for the booklet, "*Your Move*," and we will send it together with a list of manufacturers who make Zinc paint ready to use.

The New Jersey Zinc Company
Room 451, 55 Wall Street, New York

Farm Notes

Read the Paint Labels

By E. F. Ladd

THE day when paint consumers will demand that they receive what they pay for, and what they ask for, is not far distant.

Proper paint legislation will prevent many paint manufacturers from misrepresenting goods they make and offer for sale.

If anyone desires mud and water or whitewash, or white lead, or sublimated white lead, or chalk, or barytes—barium oxide—let him have it. But the person making the product should label it so the customer will know what he is getting, and pay a reasonable price for the paint.

One hundred pounds of sublimated white lead, or of corroded white lead, costs about $5, but 100 pounds of barytes might cost $1; 100 pounds of chalk, 45 cents; and 100 pounds of China clay 40 cents. The amount of pigment in a gallon of paint made of white lead and zinc would cost not less than 56 cents. One gallon of paint from the other pigments might cost 11 cents.

If customers desire benzine in their paint, let them have it; but tell them of it. If they wish China wool oil and resin, let them have it; but give them facts. If they ask for barytes and China clay in place of white lead, give it to them; but be honest and tell them the truth. But here is where the rub comes. If the paint manufacturers are honest and tell the customers the truth, they won't pay fraud prices. The paints containing these cheap inerts are selling to the customer out of proportion to their cost.

I purchase white lead and I pay within a few cents on the hundred pounds of what I would have paid for well-known brands. What do I get? Here is a product labeled, "Pure White Lead," bearing the name of a well-known paint manufacturer. It is 82 per cent barytes, the rest being zinc oxide, and lead sulphate. I buy a prepared "Exterior White," guaranteed to be made of perfectly pure materials. I find it to be 54 per cent zinc, 8 per cent lead, 23 per cent silicates, and 13 per cent magnesium and lime carbonates. Some outside paints contain 70 per cent of zinc, 22 per cent of silicates.

The analyses of a number of classes of paints are given in a bulletin called Paint Bulletin No. 6, issued recently by the North Dakota Food Department.

Barytes is not classed as inferior or superior, but when barytes is sold at white-lead prices a different question is presented for consideration.

There are no materials entering into the combination of mixed paints that will, in the product, produce anywhere near 5 per cent of water. I have failed to find as much as 3 per cent. Water is added, perhaps, not directly in all cases, but at times through an emulsifier.

The benzine used in many paints costs from 12 to 15 cents the gallon. Turpentine costs about 45 cents the gallon. Benzine is used in the place of turpentine, and in the use of benzine much of the linseed oil may be displaced.

These are Some of the Cheapeners

Some of the goods that bear the names of high-class manufacturers are not as good as the manufacturers know how to make. Others are making paint as good as they know how to make in competition with existing conditions.

It does not concern the consumers so much how paints are made: it is a question of telling the truth, of letting the public know what is contained in the paint, and then charging in accordance with the cost of the production of the paint.

Water, China clay, whiting, and clifstone are not put into paint to add value to it, but are added because they cheapen the cost.

Barytes furnishes weight; whiting, China clay, or magnesium silicate gives bulk; and weight and bulk are important to the paint manufacturer. Hence the combination of this class of products is used with white lead and zinc.

It is no argument to say these paints wear better than some of the paints. If this be true, then let the public know of what the paints are composed in order that they may have the benefit.

I have found that the people of North Dakota have no difficulty in familiarizing themselves with paints, or with the paint labels. When there are truthful labels we shall find the honest paint manufacturer forging rapidly forward, while the dishonest man will be eliminated, and the people will judge for themselves and pay for what they get.

Let us have a label-formula law. Then if some manufacturer thinks he has a real gilt-edge chance to deceive the public, the false advertising laws will catch him, and publicity will drive him out of business or into practical lines of honesty.

There are a number of leading manufacturers who put labels on their paints at the present time.

How a Silo Saves

By H. H. Shepard

FOR a silo with a capacity of 45 tons, and possessing durability and beauty as this one does, the cost, $165.90, is low.

This silo is on the farm of George Kopp of eastern Missouri. It is 28½ feet high and 10½ feet in diameter. The

This concrete block silo, the owner says, paid for itself the first year out of the saving it made possible in the wintering of his stock

walls are of concrete blocks made on the farm, with a No. 9 wire laid in every alternate course of blocks.

The owner kept an itemized account of the cost of construction of this silo, which is as follows:

150 sacks cement at 43 cents	$64.50
Lumber	13.00
Nails	.50
Ventilator	2.00
Hooks on door	.30
Collar on pipe	.10
Rent on block machine	8.00
Labor for mason to lay blocks	68.00
Rubber roofing	8.00
Wire	1.50
Total	$165.90

Where gravel is scarce, the cost might run up to $200. Could the owner have done his own mason work $100 would have paid the bill.

The sand and gravel for the concrete blocks were on the farm, and the owner did all of the hauling and making of the blocks. The $8 paid for rent of the block machine is no doubt economical where a concrete block machine cannot be used regularly on the farm. The labor item includes only labor hired outside of home help, and not that of the owner or teams, nor of board of hands.

By contract, the owner taking no part whatever in the work, a silo of this kind would cost around $250 to $300, according to the cost of labor and materials in the locality. I know of one case where a man and his boys built a monolithic concrete silo of larger size for much less money, the only items of expense in that case were for cement and reinforcing iron, hog woven-wire fencing and barbed wire being used for this purpose.

The owner of this silo says that with the high prices for feeds last winter and reckoning his saving from feed bills, his silo fully paid for itself the first year. He figures that the silo saved in feeds last winter more than an average of $10 a head on the wintering of his cattle.

Mr. Kopp also states that his horses and mules eat silage well, and that they do well on it as a winter feed in connection with other feeds.

Bankers and Farm Life

A CONFERENCE of the committees on agriculture and education of thirty-nine state associations of bankers will be held at the Hotel La Salle in Chicago, Wednesday and Thursday, July 7 and 8, 1915.

The purpose of the conference is to give a strong impetus to the banker-farmer movement. It is believed the conference will define authoritatively the lines on which the bankers of the United States will proceed to do the most good for the agriculture of the country.

Leaders of the banker-farmer movement in thirty-nine States, the deans of the leading colleges of agriculture, and the editors and publishers of the most representative farm papers will attend.

The progress of the county-agent movement and the opportunity to extend the work of farm demonstration will be explained in detail by a representative of the United States Department of Agriculture. The country-church movement will be discussed by a representative woman worker, and a minister who has been foremost in the work.

A RESOLUTION declaring the responsibility of the banker to aid agriculture and country life, and the importance that he shall co-operate by organization and individually with all movements looking to a better agriculture, has been adopted by the American Bankers Association by its executive council. The 15,000 members of the association will receive a copy of this resolution.

Getting $100 a Cow

[CONTINUED FROM PAGE 5]

knows that we know them. So there isn't much discussion about prices. When we give a price he knows that that price will stand for the time. The buyer has come to know, too, that his competitor will not get our product at a less price, for we have only one price for every city.

"I believe we have been fortunate in the small amount of losses sustained. In the period during which I have sold cheese for the co-operative factories—eleven years—the total losses will not exceed $500. For 3½ million dollars' worth of business, that, I think, is a fairly good record. It used to be a common experience for a farmer to lose from one month's to a whole summer's milk on account of the failure of some speculator's operating a cheese factory.

"I am paid a commission on the amount of cheese I sell. This method is somewhat different from that employed by most co-operative associations, but I believe it is entirely satisfactory to the persons interested. I make terms with the several factories, individually, regarding selling and all office work. I might say that it costs the factories less than one per cent on gross sales for this work—bookkeeping, buying supplies, paying farmers, selling, shipping, office rent, and so forth,—which is considerably less than Eastern call boards cost the cheese producers there, taking into consideration the number of salesmen and dealers that make their living from the trading in cheese. In fact, I do not know of any business of more than one-half million dollars a year that has its sales and office expense at less than one per cent; usually it amounts to from 5 to 15 per cent."

The annual record of the herd of David Fitzpatrick may be cited to show what good prices mean to the members of Tillamook County's co-operative factories. Fitzpatrick's 25 cows, which are hardly more than average animals, gave an average annual gross return of nearly $138 the cow. And by gross return is meant the amount received after factory expense had been deducted. Neither does this amount include the value of the whey, which, according to the Oregon Agricultural College, is worth 5 cents a hundred pounds. The whey from the milk of these cows made $348 worth of pork, and fed eight brood sows. Here are the Fitzpatrick monthly milk checks for the year: January, $80.83; February, $81.57; March, $248.42; April, $417.58; May, $426.86; June, $406.49; July, $410.02; August, $353.50; September, $347.94; October, $348.57; November, $218.44; December, $108.84. Total, $3,449.06. Average the cow, $137.96.

A stock company, organized this year, is manufacturing the whey from one of the co-operative factories into sugar of milk, largely used as a baby food. This company has erected its own building, and is paying 7 cents a hundred pounds for whey. A movement to make this plant co-operative is under way.

The prosperity of Tillamook is reflected in its good roads and bank deposits. No other county in the State has as large a percentage of macadam or turnpike highways. One main road, 60 miles long, which runs the length of the county, is macadamized, and the lateral roads have been made permanent. The last report made to the state bank examiner showed there was $756,100.03 on deposit in the banks of the county—$118.50 for every one of Tillamook's 6,266 persons. Remembering that dairying is the only well-developed industry, and that only 15,509 acres of the county's total of 720,000 are improved, Tillamook's financial showing is distinctly creditable.

EW

When the Sap Runs

Nahum Baxter's "Big Idea" Proves He is Still Young

By ANNIE HAMILTON DONNELL

"DO YOU think it really will do to leave them alone overnight, Perry?"

"For the tenth and last time, yes!" laughed Perry Baxter. "That is, of course, if we do them up in plenty of antiseptic cotton bat—"

"Perry, stop! You're laughing at your own old father and mother."

"No such thing. I'm laughing at you, Honey! 'Clare to gracious, you do baby those dear old souls within an inch of their lives!"

Soft color crept into Geneva Baxter's cheeks—crept up to her fair hair.

"*I* 'baby'!" she scorned. "What about you? Who is it won't let Father mail letters on the corner because he'd have to cross the street?"

"Oh, that!" dismissing the charge lightly. "The boulevard is so broad and, besides, Father needs as much exercise as round the block to the post box on Hanover."

It was into the post box three streets back of Hanover that Father usually dropped the letters. Once out of sight of the house of this careful son he pounded briskly away on his cane. Father usually took considerable "exercise." He came home now from a mailing expedition and sought out Mother in their great sunny room.

"Well?" he demanded. "Well, Mother?"

"They've about decided to go, Father!" she whispered excitedly. Mother's face just now in its soft pink becomingness was lovely. "We'll just keep very patient and wait."

"Very im-patient," he corrected, suddenly kissing her. For fifty years Father had been suddenly kissing Mother, and she still received the dear onslaught with the shyness of a girl. These two had come a long distance together, always in perfect step.

"It'll be great, just us two alone!" whispered Mother.

"Great! What do you suppose I've been hatching up, Mother? Mischief! Came to me right in the middle of the stree—" It was too late to save himself; he might as well have added the "t."

"Nahum Nathaniel Baxter, you've been crossing streets again! Whatever'd your son Perry say?"

"Sh!" begged the old sinner. "Don't speak so loud. You'll get me into trouble. If you do," with sudden inspiration, "I shan't tell you my great idea—Mary Euphemia Baxter!"

In subdued chorus they giggled like children. Curiously a load seemed lifted from Father and Mother. It was a load of kindness and tender care.

"Father, you tell me quick that idea!"

"Well, see here—I'll have to kiss your hair away from your ear first, so you can hear—"

"Father! Old lover!"

"Old lover yourself! Sh, listen!" He whispered something in the soft, crumpled shell of Mother's ear, and Mother uttered a little cry.

"Why! Why, how'd you come to think of such a beautiful thing's that, Nahum Baxter?"

"Like it, don't you, Mary Baxter? Well, it came to me right in the middle o' Harrison Square, just before I mailed Genevie's letters, an' if I didn't most drop the whole caboodle!"

"Harrison Square—oh, Father! What would Perry say to you, crossing all o' those streets? It pretty near scares me too."

Father nodded. "That's because of all the fuss the children've made. I guess my eyes are good enough still to see both ways, an' my ears can hear both ways. Awhile back I just struck at going round the block, Mary,—I couldn't stan' it. Me as spry as ever I was!"

"I know, I know," sighed Mother gently. "You don't grow a mite older, Father. I feel same way about dishes—if Genevie'd only let me wash 'em!"

But they came back at a bound to cheerfulness at the remembrance of the beautiful idea Father had had in the middle of Harrison Square. It grew momently more beautiful. They put their old heads together and added splendid details to it gleefully—made it into a thrilling little conspiracy.

"I know just the kettle I'll use!" conspired Mother.

"Lard pails'll do for me," Father said. "Genevie got any-big lard pails, think?"

It was late March. Spring was already afoot and abroad through country lanes and in moist woodsy nooks. For a week the spring elixir had been in the air even in the city, and Father in his walks had breathed it in wistfully. Oh, the joy of spring in his blessed country when it could be so good here! If here he could pound along like a boy, what could he not do there! He visioned another Father in blue overalls, starting out to inspect fences, to see if the sap was running—

Oh, the sap would be running to-day! That was the thought that came to Father in the middle of Harrison Square just before the Big Idea. Then on its heels, the wind of it taking away his breath, came Father's Big Idea. It stopped him like a clutching grip; when he went on again it was hand in hand with it, jubilantly home to Mother.

The marriage of Geneva Baxter's old school friend in a distant city had been for some time a disturbing subject of discussion between Geneva and her husband. Should they go? Should they not go? Ought they to leave Father and Mother the better part of two days and, worse still, a night?

It was the night that really worried Geneva, although she could scarcely have defined her fears.

"They're fleshier and bloodier to you than they are to me," she sighed, finding relief in gentle humor. "I'm only flesh-in-law and blood-in-law. You ought to worry the most, Perry."

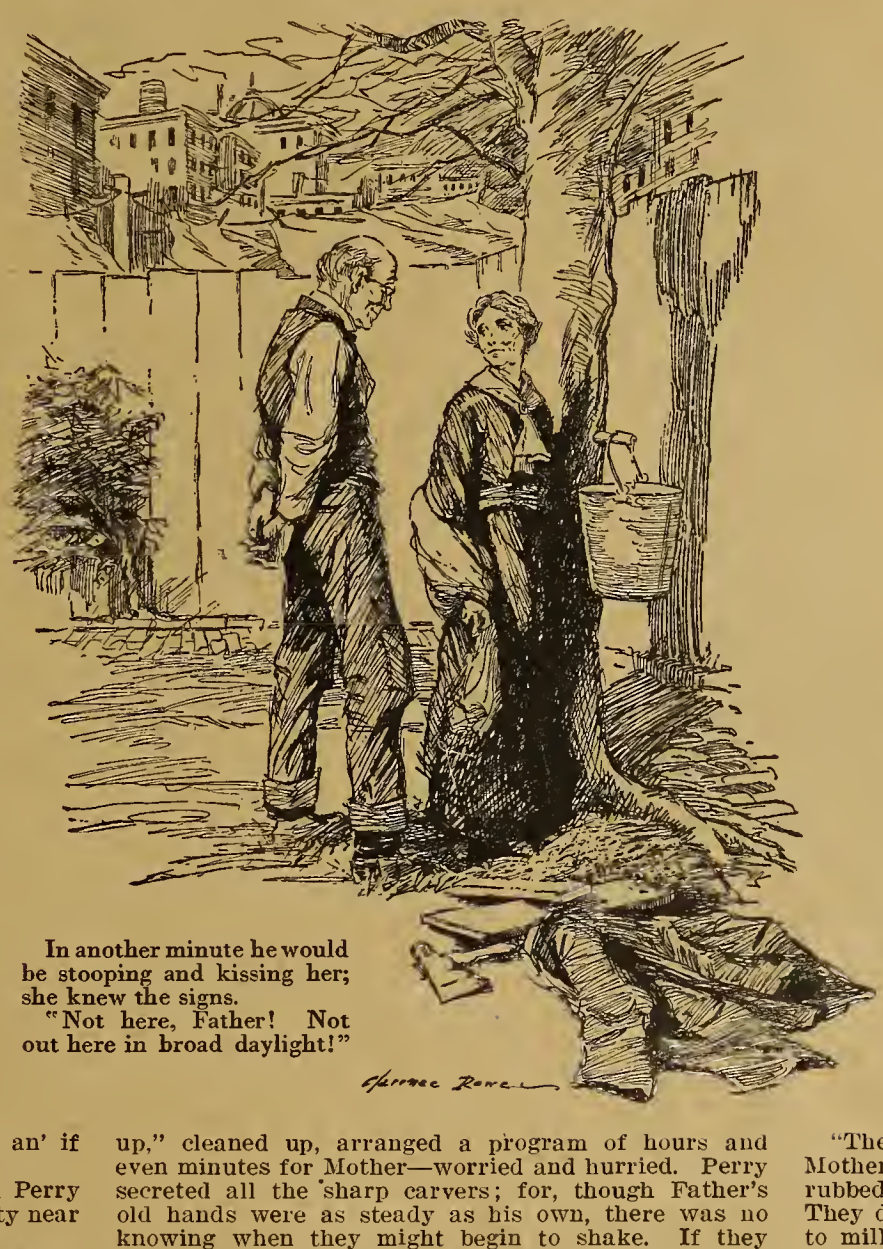
"Oh, I'm doing my part, Honey," he returned. "I guess when I tell you what I've done— Sh! Wait a minute!" He rose and closed the door with careful silence. "I've hired a night watchman!"

"Perry Baxter!—a what?"

"Well, perhaps not really a night watchman, but someone to happen round three or four times Thursday night and see that everything's all right. I—er—thought you'd feel easier."

"Thought *I*—" but she got no further for the need of other use of her lips. "You're a nice boy!" she mumbled with her kiss. "I like you if you are funny."

On Wednesday it was definitely decided that the younger couple should attend the distant wedding where their presence was so eagerly sought. Geneva made minute preparations and plans. She "cooked up," cleaned up, arranged a program of hours and even minutes for Mother—worried and hurried. Perry secreted all the sharp carvers; for, though Father's old hands were as steady as his own, there was no knowing when they might begin to shake. If they began on Thursday or Friday—oh, it was safer not to leave sharp knives round, much safer! Geneva would worry.



In another minute he would be stooping and kissing her; she knew the signs.
"Not here, Father! Not out here in broad daylight!"

Up in the big sunny Father-and-Mother room there was a hint of electricity in the atmosphere. The spring unrest outdoors had surely leaked in. Neither Father nor Mother could sit still in their chairs. Or was it something other than the stir of spring in their blood? Was it that other stir down-stairs?

"They're going to start at eight, Father."

"And get back about eight at night next day. I been looking their train up."

This was a rather threadbare topic, but worth repetition. To an old couple, stifled and swathed to mild suffocation in affectionate care and anxiety, the respite of two days and a night was an epoch. But there was something deeper than that.

"We'll have such a beautiful time, Father, doing—you know what!" suddenly cried Mother.

"I know what!" Father responded mysteriously. Here up-stairs, too, the doors had to be closed cautiously. A new elation had crept into both faces.

"Father, you been feeling any—different, just lately?"

Oh, yes, he had been feeling—different!

"Why, what you mean, Mother?" but he knew what she meant.

"Kind of—different. Something kind of in the air, as if you'd got to get outdoor and *do* things. Father, I want to put my old shawl over my head an' go watch you spade up my pansy bed an' the sweet-pea rows! It's spring, Father. The time o' year we always started in—"

Father was on his feet, pacing the floor. A kind of savageness seized him by his mild old throat and wrung out hot, long-denied words:

"The city's no place to have it spring in!" flared Father. "It's wicked to be cooped up when the sap's running! Look out the windows—nothing but houses in rows! Where there'd ought to be trees—sugar maples! What business have you and I got dressed up in Sunday clothes like this with the *sap running?*"

With soft red cheeks Mother headed him off, though Mother felt just that way. Savage unreconciliation caught at Mother's throat too, beneath her Sunday laces.

"Wait—hush, Father!" she pleaded. "You've forgot the back yard! You come look out a back window—why, Father, remember what we're going to do the minute the children have gone! You haven't gone and forgot that?"

If he had, it came back to him now quietingly. He dropped rather heavily into a chair.

"Of course, of course," he said. "I just sort of got started rampagin'. I'm all right again now, Mother. We'll have a great old time."

With a visible jerk they got themselves together again and sat still, in their Sunday clothes. Mother had quietly drawn the flimsy folds of Genevie's lace draperies across the front windows. She took up her knitting and began to hum as the needles flew. Father attempted his customary whistling accompaniment. They were resolute in their determination to have a great old time when the children were out of the way. But still—there should be no "but stills"!

"Be it ev-er so humb—" crooned Mother and stopped. That was the wrong tune.

"Ev-er so humble. There's no place like—" Father stopped too. His whistle trailed out ludicrously. When their two glances met the old people laughed. Father and Mother could always laugh. But the wistful hunger for Home, Sweet Home was in the misty back of their eyes. It was always there.

"Start up something else, Mother,—'America' or 'Believe Me If All'," advised Father gayly. But the humming-whistling duet was not continued that afternoon.

Early next day the children, with new misgivings added to the old, tore themselves away. Genevie came running back from the corner to remind Father not to stumble over the loose place in the carpet at the head of the stairs. She had just thought of it. If there were only time for Perry to put in some more tacks!

Perry came back next, from two blocks away. Father met him at the door.

"Tell Mother," he panted, "not to use any gas even if the electricity gives out. Some of the fixtures work hard and she mightn't turn 'em way off. Just remembered it. Use candles—top shelf of china closet."

Again they saw him returning.

"Don't fall getting those candles down. If I only had time—" He dashed past Father in the doorway and got them down himself.

"They're dear children, Father," Mother said. "They—they like us. I guess you better kiss me, Father,—I do' know but I'm going to miss 'em."

He kissed her—that was never hard for Father. But he had no notion of letting her miss the children. Already he was preparing for the business of the Big Idea. There was no time, no time at all to be wasted.

"Ain't I got my overalls here, Mother? Somewheres up-stairs? You'd never a-thrown 'em away."

"They're hanging on their shed nail at home," Mother answered quietly. "I went out there an' rubbed my cheek against 'em 'most the last thing. They did look so's if you would put 'em on that night to milk in! One o' my kitchen aprons is hanging in the kitchen, too. Father, don't you believe we'd feel more at home up yonder in our aprons an' overalls than what we would in white robes?"

"There, Mother, there,—I only just happened to think 'twould seem kind o' more homelike—that is—I mean—"

"'Twould," agreed Mother promptly. "We'll wear 'em. Perry's got a pair an' Genevie has got a-plenty aprons. You wait."

In the "children's" back yard grew a single tree. That tree was a sugar maple, and Father was going to tap it. That was his beautiful Big Idea. To tap it in two places and draw off the sap in Genevie's biggest lard pails. No single detail had been forgotten. Father and Mother were going to have a sugaring-off—that was to be the glorious finis.

"I got some pieces o' wood all picked out for the spiles," proceeded Father excitedly. "But I didn't dare whittle 'em out, for fear the children'd get wind of something going on. It won't take me two whisks of a calf's tail. You be getting out your kettles an' things, Mother."

They worked briskly, Mother singing in the kitchen and Father in the little shop-room, whistling. The two happy sounds met halfway and made a single sweet tune. The kettle that Mother rummaged out was big and deep like—a little like—one at home. It would do, she thought; but at the back of her mind was always the memory of the great sap kettle swung over the fire in the old sugar house on the farm. Other memories were in the back of Mother's mind—of the sugaring-off parties of young people the children used to invite, and the gayety and fun and joy of it all. Father dodging about as spry as a boy—as any boy there—she herself moving lightly enough among her young guests—host and hostess, she and Father, in their own old home—

"Ready! Come on, Mother. You got to see me do it," called Father jubilantly. They went out together to the sugar orchard of one tree in the little city back yard. Father tapped and [CONTINUED ON PAGE 19]

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No. 2807

No. 2653

No. 2759
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Good Health Possible for Your Baby

By S. JOSEPHINE BAKER, M. D.

FRESH air in abundance, nourishing food to increase the bodily strength, and attention to the functions of the body to help elimination of waste products are the three best methods we have of restoring health, no matter what the disease. So they are, also, the best methods we have of preventing disease, for like three watchful sentinels they stand guard against and repel the invasion of harmful, disease-inciting bacteria. The point to be remembered is that bodily resistance to disease cannot be gained rapidly, and the lack of it is often realized too late.

The child who starts life handicapped with low vitality is outdistanced in the race of life almost before it has started.

The diseases of infancy and childhood select the weaklings first; even if these ills are conquered, there remain the weakened constitution and the constant battle with disease throughout afterlife. Tuberculosis, which claims more victims than any other one disease, occurs most frequently in young adult life. It depends almost entirely upon weak bodily resistance lasting from childhood. Malnutrition in childhood results inevitably from malnutrition in infancy. If we could bring all of our babies to childhood with normal bodies and keep them so until childhood has passed, tuberculosis would cease being the scourge it is today. This is equally true of practically all diseases.

The secret of long life must be learned at life's beginning. Health habits of babyhood become the health habits of childhood, and the reward is in a healthy adult life.

It is a common practice to start a bank account for the new baby, added to on each birthday, with the interest accumulating until, when the boy or girl reaches twenty-one, a substantial sum is ready as a reserve fund to fall back upon if the need comes. Would it not be well to start a health account in the bank of life for the new baby? Every critical moment passed, every disease prevented in infancy, will add to it amazingly; a robust and normal childhood will make it grow, and the "nest egg" of health, once started, can be kept increasing until it begins to draw the dividends of vigor and vitality that money cannot buy. With its reserve fund to draw upon in time of need, the bank of health is an institution that never fails.

We are awakening to the fact that the conservation of child life and health is the key to our whole health problem, and is our most vital national need. The world does not need more babies, but it does need better babies; for the physical vigor and mental and moral well-being of any race of people determines not only their power to live out their individual lives to their fullest development but, indeed, their ability to perpetuate themselves and to endure as a race.

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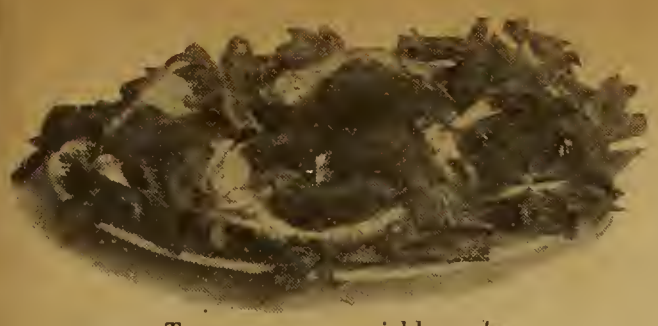


Tomato savory—quickly made

Recipes That Have Been Tried

By OUR READERS

Tomato Savory—Slices of stale bread, as many eggs, half that quantity of tomatoes.

For this dish you need sufficient slices of bread to cover the bottom of fire-proof dish. Fry the slices in butter, put them in the dish, and cover each slice with a fried egg. Add butter and salt to your cooked tomatoes, heat them, and rub them through a sieve on top of the eggs. The dish should be covered with them. Decorate with a little parsley; and, if you like it, add a flavoring of anchovy.

M. W. HOLLAND.

If one is so fortunate as to be able to have wild grapes for the gathering of them, they make an excellent substitute for currants and raisins in mincemeat; not a substitute exactly, as they have their own distinctive flavor. But they will save the outlay of money that would be necessary for raisins and currants, and are in some respects an improvement.

A. J., Pennsylvania.

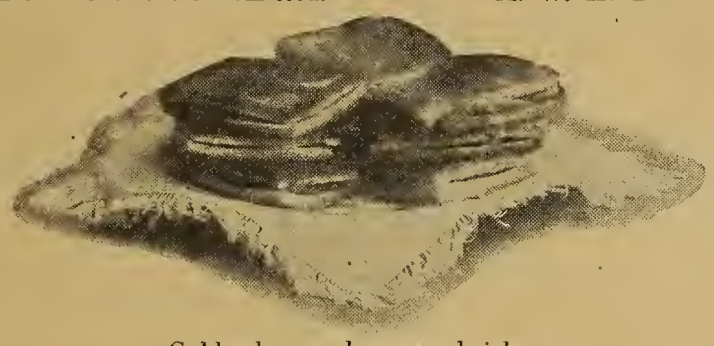
Green Pea Fritters—Cook a pint of peas in a little boiling water until tender and nearly dry. Drain and mash, seasoning with salt and pepper. Make a batter by using the water drained from peas and sufficient rich sweet milk to make a cupful, two well beaten eggs, one-half cupful of sifted flour with a level teaspoonful of baking powder, and half as much salt. Stir the mashed peas into this, and beat until it is a smooth, green batter. Have a griddle smoking hot, drop the batter in small spoonfuls, and brown each side delicately. Serve hot.

Green Pea Soup—Cook a quart of shelled peas in a pint of boiling water for twenty minutes. Drain and mash the peas, then return the water, season highly with salt and pepper, and add a quart of hot milk. Rub two level tablespoonfuls of flour with two of butter. Add to the hot soup, and stir until it boils. Remove from fire, add sweet cream, and serve at once.

Green Peas on Toast: These make a delicious breakfast or supper dish. Toast small, regular slices of bread, arrange on a hot platter, and cover with creamed peas. (Those left over from dinner may be warmed and served in this way or in pattie cases.)

Hot Cheese Sandwiches—Cut thin square slices of stale bread as for sandwiches; butter half of them, then put on each buttered square a thin slice of creamy cheese, then a slice of ham, and on top of the ham another slice of cheese. Place the unbuttered pieces of bread on top so as to form sandwiches. Fry them on both sides a golden-brown, in butter, and serve very hot. They should be fried on a pancake griddle. The ham may be omitted.

M. W. HOLLAND.



Golden-brown cheese sandwiches

When the Sap Runs—Continued from Page 17

inserted his "spiles" and hung his pails, still under the pleasant spell of excitement and illusion.

"It's exactly the right kind o' weather for sap to run—it's got all day, Mother. Ought to be a lot to-morrow morning. We'll give it most up to noon, then we'll boil her down! You going to make me some fritters for supper to-morrow to eat our maple syrup on?" He was laughing down from his big height to her lesser one. In another minute he would be stooping and kissing her; she knew the signs. Right here in the children's back yard with all the neighbors—

"I'll make 'em—I'll make 'em, Father," she said nervously. Mother wanted that kiss, but if it could be delayed long enough to—

"Not here, Father! Not out here in broad daylight! I'll make two rules o' fritters if you'll just wait for us to get under cover—"

"Mother! Mary Euphemia Baxter!—you ashamed o' me?" he demanded sternly. A stern father with those twinkles behind his glasses!

But Mother's soft old heart misgave her—Father was worth so much more than all the neighbors under the sun! She lifted a determined, a brave face.

"Now do it quick!" she breathed. They might all be making beds or something, and not see at all, but if they did, *let 'em!*"

"Bless your heart, Mary Euphemia Baxter!" laughed Father tenderly. "Think I'd really do it with you feeling like that? Now me—I'd as lief kiss my own wife in the middle of Harrison Square! Look on, everybody,—she's been mine fifty years. I guess I've got a right!"

The rest of the day and all the precious evening the pleasant spell was over them. They made believe undauntedly. Every little while they made trips to the children's sugar orchard and peered into Genevie's pails. They bustled about the house, doing home things—covering the carpets with newspapers where the sun shone in, setting the chairs back properly against the wall, playing their little play. It was beautiful to "run things" again, laughed Mother. It was beautiful, Father declared, to see Mother run things. They had a beautiful day.

Up to almost noon next day the sap dribbled into Genevie's lard pails. Then Father took them down and carried them in to Mother. She had her big kettle all ready, but at one glance into the pails she slid it out of sight and substituted the little nappy she had planned to make her fritters in. Father poured his sap into it gayly, intrepidly. The zest of the game was over, but not for an instant did they cease to play it. The memory in the backs of both their minds stayed in the backs of their minds. Father for Mother, Mother for Father, they played the little game.

"This is like old times!" Father cried, rubbing his palms together. "Boiling down the sap—listen to it bubble, Mother! Great, isn't it?"

"Great!" echoed Mother.

"Guess you'll have to have those flapjacks ready right on the dot—minute the syrup thickens up a bit."

"The very minute, Father." Very carefully Mother watched her little "kettle," stirring and testing and tasting. As the contents boiled away, a little crease of anxiety deepened between her brows. There seemed so little now. And *now*—Mother was a prey to alarms. Suppose it all boiled away! With resolute old hands she removed the sap from the fire on the first approach to thickness and hastily tossed together her batter for Father's cakes. It was midway between dinner and supper when she set out the little feast. She hummed clearly as she worked and Father caught up the tune.

"Supper's ready!" she announced briskly, a plate of steaming golden disks in her hand. "Nice an' early, isn't it? But I knew your mouth was watering. Here, you sit right down an' begin."

"Where's yours?" demanded Father. "You got to come too."

"Of course I'm coming, but you begin while they're hot. Here's enough sap—syrup to begin on." It was all there was. Mother's honest soul shrank from the quibble, but it had to be. She rattled about in the kitchen, brought in fresh cakes to Father, kissed his bald spot as she set them before him. Her own plate she concealed deftly behind Genevie's sugar bowl and spoon holder.

"Aren't we having a good time, Father?" she chattered.

"Great—great! These flapjacks melt in my mouth—you always were a master hand at 'em, Mother. That's the only trouble with your cakes—they disappear. Disappearin' cakes!" He laughed hilariously at himself.

That was the trouble, same trouble, with the syrup, Mother thought sadly. Disappearing syrup. It wasn't syrup at all—just sap. She had not dared to wait. Now as she watched poor Father decant the few thin drops onto his cakes, a fierce little sob pushed up from her heart to her throat and fought there. For suddenly Mother realized that Father, too, was making believe,—she was not the only one. Father was smacking his lips!

So absorbed were the two old people in their losing little game that they did not know the children had come home. They had taken an earlier train because of their disquiet of mind, and had stolen in by way of the back yard to take Father and Mother by surprise. But it was Father and Mother who had surprised them. The telltale spiles that were still driven into the tree caught Perry's eye at once, and in the kitchen Genevie read the story of Mother's little litter of dishes. Father and Mother had been up to mischief. Very suddenly the pathos of the "mischief" struck into their souls—the souls of the "children" of Father and Mother were susceptible to tender emotions.

"Perry, do you see—they've been boiling down sap to make it seem like old times! Just that one little old tree, when at home—" The whisper died and came again to life in his ear. "They've been homesick, Perry!"

The big son, flesh of their old flesh, blood of their blood, did not venture speech. He only nodded slowly. In through the half-open door he watched the valiant little game going on. It *was* a game—he knew. The same memories of old joys and frolics that Father and Mother had hidden from each other came back to this big son. Things cleared in his brain, and he saw Father's wistful viewpoint and little homesick Mother's.

"Perry," Genevie whispered on, "I tell you they're *homesick!* We've got to do something." And because she was a woman it was Genevie who knew first what they could do. She burst in upon the unsuspecting old pair.

"We've got home!" she announced gayly. "In a minute I'll tell you how good it is to see you darling old dears again, but first there's something else that can't wait! I've had the most gorgeous idea—came to me on—on the way home. Father, Mother, it's sap time! What were we all thinking of, never to remember? We've all got to go home to the old place and sugar-off! We've got to hurry to get there in time—we can't afford to lose a minute. And—and I thought of something else perfectly *nice!*" Her head atilt, her eager eyes seeking Mother's, "Do you suppose after we are a little bit settled—do you suppose, Mother, we could invite down a few of Perry's and my friends? Some of 'em never heard of a sugaring-off! We could show 'em!"

As indeed they did in the beautiful time that followed. Father and Mother, host and hostess again, moved about the old place, straight and young, in the peace of their old souls. The children watched them, smiling into each other's wet eyes.

"'Be it ev-er so humble'," hummed Mother, and somewhere within hearing Father's militant old whistle took it up: "'There's no place like Home'."

"We're having a beautiful time, Father!" for this was not making believe, not playing a difficult little game. "And it isn't all going to stop short off, Father! You listen—yes, first kiss me," her sweet face upheld, radiant, to him. "Now listen—we're coming back to keep Thanksgiving, Father! Genevie and Perry want to know if they can—Father, *can!*"

Her laugh trilled joyously and Father's laugh joined in. It was as if they laughed to the tune of "Home, Sweet Home."

"Thanksgiving anyway, and maybe—"

A happy vista opened before Father and Mother. Who was growing old? It was sap time again in their veins.

DAINTY FOOD

Turns Pale Cheeks to Pink.

Our best physicians of the present day seek to cure patients by the use of food and right living, rather than heavy drugs, and this is the true method, for only from food can the body be rebuilt

Many people, after living on poorly selected or badly cooked food for a long time, and when their ailments become chronic, expect the doctor, with some magic potency, to instantly rebuild them.

This is not possible. The only true method is to turn as quickly as can be, from poor food to good. A young lady in Ohio says:

"I was variously treated for my nerves, stomach, lungs, etc., but none of the treatments gave me relief.

"About a year ago when my appetite failed completely and I began to have sinking spells similar to fainting, I took all manner of tonics and stimulants, but they were of no effect. I had been brought to quit drinking coffee and taking Postum in its place and gradually began to get a little better.

"Someone suggested that if I found Postum so beneficial I had better use Grape-Nuts food, as they were both the children of one brain. I commenced on Grape-Nuts food for breakfast, having Postum with it. I found the food so dainty, delicious, and appetizing that I always looked forward to breakfast with pleasure.

"Shortly after commencing this diet, the wretched pain in my side was greatly relieved, and now, a year later, it has gone entirely, also the sinking spells; in fact, my pale cheeks have changed to pink, I have gained back more than the twenty pounds I lost, and am thoroughly well in every way."

Name given by Postum Co., Battle Creek, Mich. Read, "The Road to Wellville," in pkgs. "There's a Reason."

Ever read the above letter? A new one appears from time to time. They are genuine, true, and full of human interest.

PARKER'S HAIR BALSAM
A toilet preparation of merit.
Helps to eradicate dandruff.
For Restoring Color and Beauty to Gray or Faded Hair.
50c. and $1.00 at Druggists.

Runs on Alcohol

at cost of less than 1-2 cent an hour anywhere without electricity, springs or batteries. Superb construction. 12-inch blades. Adjustable roller bearing. Reliable. A proved comfort. Prompt delivery.

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bicycle and *know* you have the best. Buy a machine you can **prove** before accepting. **DELIVERED FREE** on approval and *30 days' trial*. **NO EXPENSE** to you if, after trial you do not wish to keep it. **LOW FACTORY COST**, great improvements and values *never before equalled*. **WRITE TODAY** for our *big catalog* showing our *complete line* of 1915 bicycles, **TIRES**, sundries and parts, and learn the wonderful *new offers* and terms we will give you. Auto and Motorcycle Supplies at *factory to user prices*. **Do not buy** until you *know* what we can do for you. A postal card brings everything.

MEAD CYCLE CO., DEPT. B-83, CHICAGO

"Don't waste your money on flimsy aluminum utensils"
Every time you buy a "cheap" cooking utensil you throw money away. Buy

"Wear-Ever" Aluminum Utensils

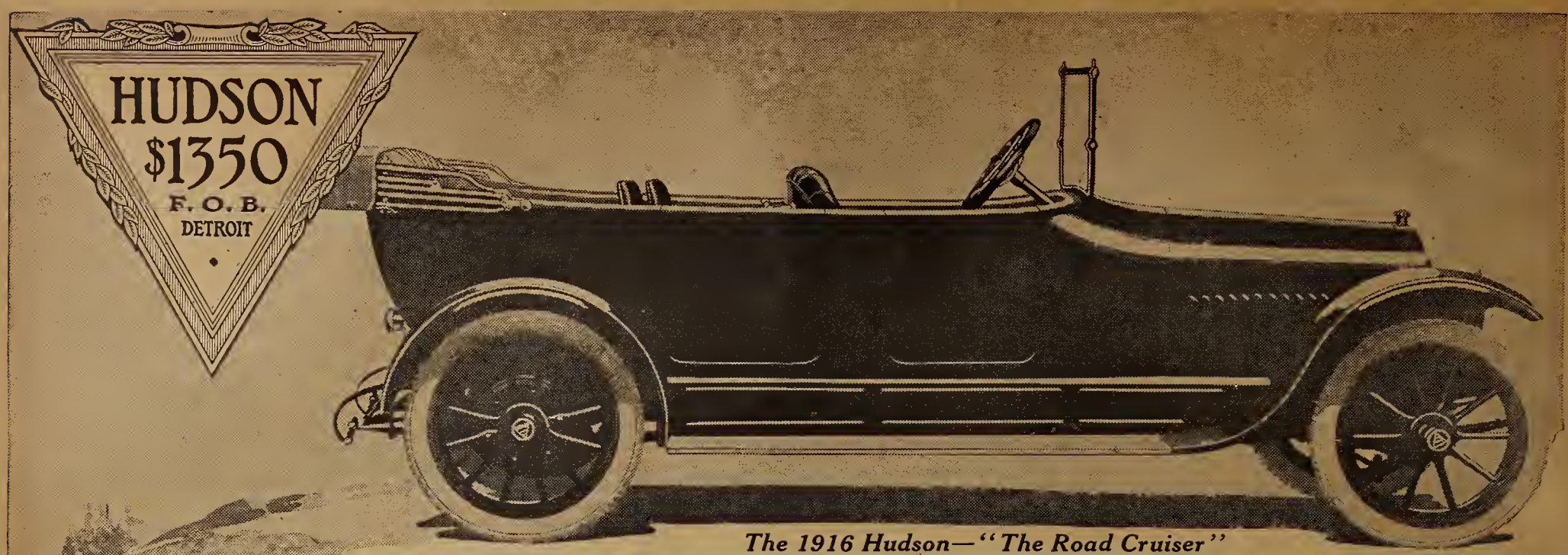
and save money. *Divide the cost by the time they last.* "Wear-Ever" aluminum utensils give enduring satisfaction.

Replace utensils that wear out with utensils that "Wear-Ever"

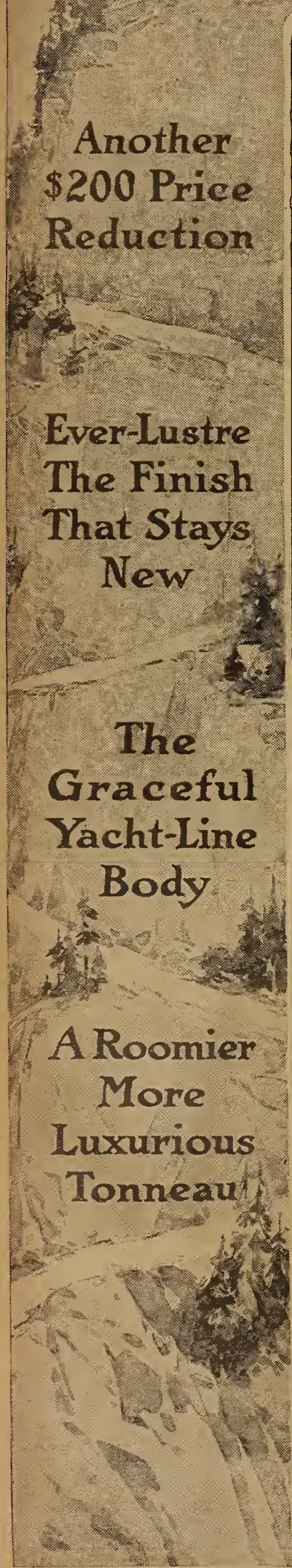
Write for Booklet, "The Wear-Ever Kitchen" which tells how to improve your cooking.

WANTED. Men to demonstrate and sell "Wear-Ever" specialties. Only those who can furnish security will be considered.

The Aluminum Cooking Utensil Co.,
Dept. 57, New Kensington, Pa.
Send me, prepaid, sample 1-quart "Wear-Ever" stewpan, for which I enclose 20c in stamps—money to be refunded if I'm not satisfied.
Name.....
Address.....



The 1916 Hudson—"The Road Cruiser"



Four More Heights Scaled by HUDSON

1—Yacht-Line Body.
2—Ever-Lustre Finish.
3—Roomier Tonneau.
4—A $1350 Price.

All these attractions are added now to this prince of the new-day Sixes.

A body so graceful, so unbroken in line, that the car has been called "The Road Cruiser." All the former attempts at flowing lines now seem crude in comparison with it.

A roomier tonneau, an extra-wide rear seat. The most comfortable seats you have ever known. Room in plenty for seven people. Yet the tonneau room is doubled when the two extra seats disappear.

Enameled leather upholstery. A leather-bound top-piece to body and doors.

$100,000 Finish

And now a finish, to equip for which cost us $100,000. We have built enormous ovens, which hundreds of bodies can enter at a time. Each coat of finish is now applied under pressure. Each goes to the oven for baking. The result is a brilliant finish which resists attack. This 1916 HUDSON will retain its look of newness.

And now our output is 100 cars daily—of this one type alone. That has made possible a $200 reduction. That, with last year's reduction, makes $400 since this new-type car came out.

This car sold at $1750 only 15 months ago. Since then, 51 improvements have been added. There is more of luxury, comfort, room and beauty, plus this Ever-Lustre finish. Yet the new price is $1350, because of a multiplied output.

24 Million Dollars Paid in 20 Months

This new-type HUDSON has been a surprise. We knew it would win in the long run. But we did not expect such sudden change to lightness and refinement. That's the reason for past delays.

On our first model we never caught up with our orders. On our second model, all last summer we were thousands of cars behind. In 20 months this car trebled our output. And in those 20 months men paid for it over $24,000,000.

But a greater marvel is the present HUDSON place. Every old idea of a quality car is now practically discarded. This light HUDSON, designed by Howard E. Coffin, represents the new idea. This is apparent everywhere in the class of men who own it.

We shall this season build 20,000—the largest output ever known on a Six. But this summer's demand—while the model is new—is bound to exceed our production. It will be the car you want if you buy a Six. We urge you who want early summer delivery to see your HUDSON dealer at once.

If not, see the car as a matter of interest. See what the new things are.

7-Passenger Phaeton or 3-Passenger Roadster, $1350, f. o. b. Detroit. Also a New Cabriolet, $1650, f. o. b. Detroit.

HUDSON MOTOR CAR COMPANY
DETROIT, MICHIGAN

Perhaps our strongest appeal to men who know is the matchless HUDSON service. It sells us thousands of cars. Ask your HUDSON dealer to explain it.

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FARM and FIRESIDE

The National Farm Paper - Every Other Week

ESTABLISHED 1877

Saturday, July 17, 1915 5 cents a copy

Fun for the Boy but Bad for the Pasture—See Page 3

Guide Posts for Our Readers

WHEN traveling along a new road, guide posts are a big help. Every issue of *Farm and Fireside* is something like a new road, so we prepare guide posts to help you read your way through the paper. You already know where to find the special departments and the regular features, so our guide posts will only point out such new and distinctive features as may appear in *Farm and Fireside* from time to time.

Attend the Panama Exposition

HAVE you seen the Panama-Pacific Exposition at San Francisco? Then don't lay down this copy of *Farm and Fireside* until you have seen the two pages of interesting pictures of the great exposition, shown on pages 8 and 9. Two more pages of exposition pictures will be shown in a later summer number. These pictures have been taken especially for *Farm and Fireside* readers and can't be seen elsewhere.

1,000 Different Plows

DID yon ever have an idea that there was snch an astonishing variety of plows? And there are certain advantages claimed for each different style, too. "DESIGNING NEW PLOWS," the article on pages 4 and 5 of this issne, is one of the best special features that *Farm and Fireside* has had for some time and yon will want to read every single word of it. Next month we shall have an article on "NEW SEEDING MACHINERY." In order to get the very latest and best information for this article, Mr. Bnrch personally inspected some of the largest machinery plants in America.

Save 365 Hours a Year

JUST an hour a day every day. But figuring ten hours as a day's work, this means a saving of 36 working days a year. "SIMPLIFIED CHORES," an article appearing in the July 31st issue of *Farm and Fireside*, points out a good many practical ways to spend the minutes and save the hours. Time is money, and this article tells you a lot of short cuts that will save both time and money, because you will be able to apply some of the ideas on your place.

Horse Secrets Up-to-Date

DAVID BUFFUM, who is one of the shrewdest and best horse experts in this country, will have a good article on "HORSE TROUBLES" next month. He will give you some special recipes for treating run-down horses that will be an eye-opener to some of the wisest horse judges. Most of our readers know David Buffum and realize that his horse articles are well worth the price of a year's subscription.

Summer Rates for Readers Almost Over

SUMMER Subscription Rates will be continued throughout July. This is the best time to subscribe or renew your subscription and get the benefit of such rates. Here they are:

A four-year subscription, 104 numbers, for $1.00. A two-year subscription, 52 numbers, for 50 cents. A one-year subscription, 26 numbers, at 35 cents—our club-raiser rate.

Mail Your Order to

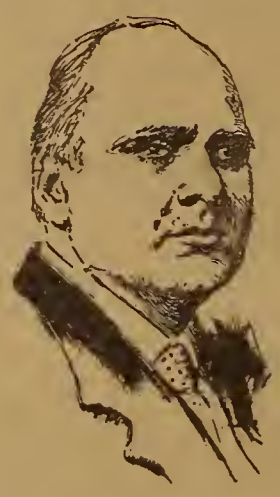
FARM AND FIRESIDE
Springfield, Ohio

The Editor's Letter

At Coolfont Farm, July 5, 1915

HE SAYS it wouldn't make any difference if I printed his name in full, and his letter too. "If there is anything you wish to publish, you need not fear that my father will read it," says he. "He will never see it nnless he changes greatly."

Nevertheless, I am not going to publish the name of my young friend in a Midwestern State from whom I recently received one of the most interesting letters the mails have ever brought me. Here is the letter:



"A few days ago I sent a request to FARM AND FIRESIDE for information concerning the corn-root aphis. I received a very satisfactory reply, but when I tried to get my father to read the letter he absolutely refused to look at it. 'These men who write for the papers,' said he, 'don't know anything about it. Most of them never saw a farm.'

"Father always has contended that the ants eat the corn, and every time modern farming is mentioned a contemptuous smile comes over his face.

"My father is not well educated; but if he were only willing to learn, how much better it wonld be! He thinks he knows almost all there is to know about farming—and in fact he does know every old and worn-ont way, bnt I don't believe he ever casts a glance at a farm paper. I don't remember ever seeing him do so. His only reading is the newspapers. How can such a man ever expect to be sncessful?

"But the great question is, What must I do? If nothing prevents I shall gradnate from the high school this year, and in a year or two I want to go to the state agricultural college. But how can I pay my expenses if I stay and work at home?

"I have three brothers, all of whom have left home and either gone into business for themselves or obtained jobs working for someone else.

"I have a ray of hope in the form of an old sow which my father gave me, thinking she was of no acconnt. She has improved since receiving a balanced ration, for what ailed her was that corn had been her fnll diet.

"Now, Mr. Qnick, I should like to get some good advice concerning my affair, and you are the one I have selected from whom to get it. I have faults, just as most people have, but I am willing to learn, and to take good advice."

Here is a typical instance of the way in which families are broken np. There is nothing bad about this man, and there is almost everything good abont the boy. A boy who wants to know about the corn-root aphis, who takes the old sow and by pnttting her on a balanced ration makes her valnable, is a boy of whom any father onght to be proud. The boy is doing the very thing a sensible father ought to desire. He is making education out of work. He is preparing to be the best farmer in his neighborhood. And whether or not he is the best, he is getting ready to be the happiest. The man to whom every insect, plant, and clod of earth is a mystery, and whose life-work is made up of efforts to unravel and master that mystery, is the happiest of mortals. His life will never rnn dry. He will always find new things in his life-work. Old age will overtake him in the act of becoming freshly interested in the new things which will be freshly dawning on the horizon of his mind, and he will die happily in the harness.

How to Be Young When You are Old

That boy is a boy to be prond of.

And how sadly strange it is that sensible men will allow their prejudices to stand between them and an nnderstanding with their sons! Suppose it were true that there is nothing in scientific farming, what harm would there be in letting the boy amuse himself with it for a while? If it turned ont to be a fad, and the faked-up notions of men who know nothing abont it and who never saw a farm, surely the boy might be trusted to find it out after a while. If it is the ants and not the aphis which destroy the corn, how easy it wonld be to prove the error of the FARM AND FIRESIDE writer who asserts that the thing is the other way about!

This man is his own worst enemy, and the worst enemy of his home. He has become divorced from his family, and is wedded to his idols—his old notions and ways. He is repelled by the idea of anyone's knowing more about his bnsiness than he does. He said once that cows have the hollow-horn, and he won't be driven out of that position by any man who writes for the papers, or any college professor, by George! He has always believed that ants eat the corn, and he won't admit that the ants are active about the corn just because they are getting honeydew from those plant lice. No! He won't knuckle down to any ink slinger!

He does himself and his family an injustice. He ought to remember that it took someone a long time to find out just the relations between the ants and the aphides, and that while he, the father of this boy, was plowing corn, he was paying taxes to pay a man to watch the ants and the plant lice. He rejects the work he has paid for. He is as foolish as the man would be who wonld unbind the grain his hired man had bonnd, and refnse to benefit by the hired man's work.

The boy—what of him? Well, he hasn't the worst father in the world.

This Boy Hasn't the Worst Father

How does he know that his father had no stirrings of affection for him when he gave him that old sow? Some people are so bnilt as to make it impossible for them to show their love. How does this boy know how dearly his father loves him? He might be willing to endure torture before he would show it; he might even be absolutely unable to show it; bnt he has a father's affection just the same.

And I have no doubt the boy has a good deal of his father's disposition. Only it is reversed so far as new ideas are concerned. The boy is probably as opinionated for new things as his father is against them. I can tell that from his allusion to "every old and worn-ont way" of farming. His father understands all that, he says. Well, then, his father understands the rock-bottom basis of agriculture. These old things which the boy thinks ontworn contain more good farming than all the new things. Plowing, harrowing, feeding, crop-raising, making money out of the farm—all these were done centuries before modern science was ever thought of. Undonbtedly this father knows a great deal more abont farming than this son: the great difference in favor of the son is that he knows that there are many things which he doesn't know, and he is willing to learn. And the new things are trne too, and increasingly important.

I shonld advise him to get closer to his father; to study him as well as corn-root aphis. I should advise him to approach him tactfully next time he finds ont a new fact. If this boy had watched the ants and the aphis until he could show their habits to his father as something actually seen, he conld then have asked his father to look at them with him, and they could have made the discovery together. A man fifty years old cannot be expected to take his son's discoveries in farming very seriously at first; bnt if the boy has finally mastered the fact, he can show the old man the fact, and not the letter from someone the father does not respect. Every man respects a fact when he knows it as a fact. Don't try to triumph over the old man—it irritates him.

I would get in touch with the connty agent, and tell him just how the old gentleman feels about him and his work, and enlist the county agent's assistance. I would ask the opinions and advice of my father frequently. I would defer to him. I would not leave home. I would make as close a study of winning my father's love as I made of farming—and I would still continue to study farming. And when the time came, I wonld go to the agricnltural college if I had to walk and work my way through.

Take my word for it, my boy, your father will do the right thing by you if you take the right attitude toward him.

Herbert Quick

Always in Good Humor

OUR PRESENT NEED

In times like these, when old Mars spreads
His uet, let's be discreet;
This is a time for cooler heads,
But uot for cooler feet.
—Cincinnati Enquirer.

RESTAURANT FRENCH

An English journalist and a private of the Irish Guards were dining recently at a restaurant in a small French town. The soldier, who had picked up a few scraps of the language, insisted on ordering everything in doubtful French, while the journalist would offer explauations that were iu the nature of criticisms.

At length Tommy's temper rose to the explosive point.

"Will you," he said in English, "be so good as not to interfere with me in my use of French?"

"Very well," replied the journalist. "I simply wanted to point out that you were asking for a staircase when you wanted a spoou!"—Peoria Star.

A LAMENT

Men leave us their swag, and the stripes that they wore,
And the paintings they did, and the oaths that they swore;
And the fleers that they flung, and a pile of poor screeds,
And a few—paltry few!—leave a pinch of good deeds.
Oh, why don't they leave us their brains?

It makes us think what's the use of it all,
If maukind gets just what man can scrawl.
Why can't he bequeath what he's put in his head
And not drag it down with the worms of the dead!
Oh, why can't they leave ns their brains?—Zowie Magaziue.

SHE'S MORE PRACTICAL

"Jaggs always knows just what would save the country. He takes in every point."

"And what does his wife do?"

"Oh, she takes in washing."—Chicago Herald.

FATHER AND THE STRAP

They were speaking of the hright remarks of the little folks the other evening when this anecdote was recalled by Congressman Henry George of New York:

Recently a woman entered a crowded trolley where a man and a very small hoy were sitting side by side. Instantly the man offered his seat to the woman and seized a strap.

"Isn't that gentleman your father, my boy?" gently asked the woman passenger, breaking the conversation with the youngster.

"Yes, ma'am," answered the hoy. "We are going to the zoo."

"Well, since he is so much older than you, why don't you give him your seat?" resumed the kindly-hearted passenger. "Don't you dislike to see him reaching for the strap?"

"Not in a trolley car," was the prompt rejoinder of young America, "but I do at home."

You may be glad to know that the Wisconsin Limburger cheese manufacturer who failed the other day is settling up scent for scent.—Chicago Herald.

FACT

To this fact we've become resigned,
When slumber we pursue:
If you can't go to sleep, you'll find
That sleep won't come to you.
—Cincinnati Enquirer.

INTERVIEW WAS HURRIED

"Papa, did Harold ask you for my hand to-night?"

"Yes."

"What did you say to him?"

"Oh, he left before I came to that."—Peoria Star.

IT IS true that the hairs of our head are numbered, and the sad feature of it is that there is no place where back numbers can he obtained.

FARM and FIRESIDE

—PUBLISHED BY—
THE CROWELL PUBLISHING COMPANY, SPRINGFIELD, OHIO
Branch Offices—381 FOURTH AVENUE, NEW YORK CITY; TRIBUNE BUILDING, CHICAGO
ENTERED AT THE POST-OFFICE AT SPRINGFIELD, OHIO, AS SECOND-CLASS MAIL MATTER
Copyright 1915 by The Crowell Publishing Company

Vol. XXXVIII. No. 21 SATURDAY, JULY 17, 1915 *Published Bi-Weekly*

How to Kill Weeds

Clean Fields May Increase Farm Profits $1,000 a Year

By JENNIE ROBERTS

ONE thousand dollars a year is lost by many farmers because of the weeds growing in the fields and the pastures of their farms. The loss varies with the size of the farm and with the success of the fight against the weeds.

Farms are often a fourth, a fifth, an eighth, or a tenth weeds. The land is fertile, and will produce from 40 to 90 bushels of corn to the acre. If all of the weeds on a farm grew in one field on the farm no crop would be received from that part of the land, and the profits would have to come from the acres not growing weeds.

There are three kinds of weeds: one and two year kinds, and the kind that have live roots in the ground year after year.

Ridding a farm of weeds takes much energy, some money, and more patience. But it is work that pays big profits.

The easiest riddance of all weeds is to kill them by cultivation when they first start from the seed.

The easiest riddance of one and two year weeds that have already a good start, is to keep them from going to seed.

The easiest riddance of long-lived weeds that have permanent roots, is to keep them from bearing either leaves or seeds. Roots without leaves or seeds soon die.

Farms are often a fourth, an eighth, or a tenth weeds. This means the profits are cut down that much. Ridding a farm of weeds takes much energy, some money, and more patience. But it is work that pays big returns. Vigorous cultivation is an important part of that work

Don't Let Weeds Start

THESE three means include all weed-killing. Methods vary only in ways of carrying out these three, but any successful method requires prompt and persistent effort. Too many of us let weeds get a good start and then trust to the mowing machine to make up, in a few days in the grain fields and roadsides, for a whole season's lack of timely effort.

Mowing weeds is foolish, especially along roadsides, at the compulsion of the State, for many times the fields are full of seeds in the fall. The farms will never really be freed of weeds until the farmers of every neighborhood kill the weeds early, on both sides of the fence.

Mowing long-lived weeds does not kill them. It simply makes them spread; and mowing one and two year weeds, such as mustard, pigeon grass, tumbleweed and morning-glory, accomplishes but little more, for the short stocks left send up shoots and bear seeds in a very short time. Partially grown seeds will ripen often from the sap left in the cut stalks lying on the field. Morning-glories also have roots that sprout and send up new shoots if the old are cut off. The plow and harrow will beat the mowing machine every time, for they get in their work long before the weeds are old enough to be mown or to injure crops.

Disking fall-plowing in the spring, and harrowing two or three times before putting in the corn, is a good plan. It starts the seed and then drags the seedling out by the roots. A spike-tooth harrow, in many States, is considered best for the early work, but not so good after corn is up. Weeders may do then in some localities, but are not so good as getting ahead of the weeds before the crop gets above the ground. A cultivator does pretty well later, but many hours of cultivating may be avoided by early and vigorous harrowing.

Many special methods are advocated for special kinds of weeds. Some of these are practical from the farmer's standpoint, and some are not—spraying mustard, for example. Mustard costs farmers thousands of dollars every year, but spraying costs about one dollar an acre besides the work required, and it tramps down the crop. It kills only the plants, too. Spraying may be desirable under some conditions, but not for mustard in the field.

To clean out nearly a bad field of mustard in one season, sow clean millet or other smother crop seeds in June after keeping the field well disked and harrowed all spring. This is less work and expense than spraying, brings better results, and gives a good crop of hay instead of a half-tramped-out crop of something else.

Killing thistles and similar well-rooted weeds by cutting them off with a hoe or spud, and putting salt, gasoline, or carbolic acid on the stub, is another method of doubtful economy, for it takes time and expense; but it is often practical where plants are scattered and the field a permanent one.

Pesky Quack Grass

"HOW can I rid my farm of quack grass and Canada thistle?" is a question often asked, and the answer is all contained in the reply, "Choke out any long-lived weed by not letting it bear leaves."

Quack has jointed underground stems. That is the reason it is so difficult to handle. It does not wait for seed to make a new plant. Almost any half-inch of stem broken off will furnish one inside of a week. Its seed ripens about July 1st, too—early enough to be gathered in the grain and hay harvest and be all over the farm next year in the spreader and drill.

Canada thistle has no real underground stems, but it does have long roots that run beneath the surface and send up new shoots and soon overrun the field. Three feet of hardpan clay is not enough to keep these shoots from reaching the surface.

Quack is harder to get rid of than Canada thistle, and any method that kills it will kill thistle, but one must always consider work, expense, and the condition of the field. If the field is badly overrun it may be necessary to summer-fallow it by plowing deeply and then cultivating at various depths. Do this often enough to prevent any leaves from growing, and to allow the sun to kill the roots pulled up. If the field is damp, rake up the roots or they will sprout again. Raise a cultivated crop there next year to catch—with a hoe or spud if necessary—any weeds that have been missed.

If the field is not badly infested it will probably not be necessary to lose a crop by summer-fallowing. Use early fall plowing and harrowing, follow by spring disking and harrowing, and then sow a smother crop of millet, buckwheat, or hemp. Follow this too with a cultivated crop next year.

Small thick patches may be smothered with straw or with heavy paper, weighted down.

And don't forget what the shepherd says: "You may not like sheep, and maybe you are the kind that a collie won't work for, but my 'Shep' and I are going to turn the weeds on my farm into mutton and sell the weeds in the form of meat. You've got to get down on your knees in the fence corners and pull every weed by hand if you beat sheep. When it comes to rosebushes, ironweed, morning-glory, and a lot of other pesky weeds in the stubble fields and pastures, the sheep's the winner every time."

Designing New Plows

How Inventors Are Improving Soil-Stirring Machines

By D. S. BURCH

"WHY have any more new plows? We have enough." That's what one farmer said, and it's the sentiment of a good many more. Some manufacturers also deplore the new designs. "Why, there are so many different plows now," said one, "that a customer never makes up his mind to buy!"

More than a thousand different styles and sizes of plows were on the market when this year began. Yet in the face of that array, new ones have kept appearing. And even now the experimental departments of implement factories are the busiest places in the works, all because of the merciless clash of competition.

As far as the 40- and 80-acre farmer is concerned there isn't very much strikingly new. Walking plows and horse-drawn sulkies and gangs have shown just a normal, healthy development.

Invention seems to have run mostly to sizes upward from the small plows and downward from the great steam-plowing outfits, so the man most benefited is the owner of a farm ranging from 160 acres to a section. Still the new machines are interesting in themselves.

One of the newest is a "rotary tiller." It does the work of a plow, disk, and harrow all in one operation. The two principal parts are a revolving cylinder or "rotor" armed with strong steel claws, and a gas tractor which supplies the power to run it. The rotor reminded me a good deal of a threshing-machine cylinder, and is run at about the same speed. The claws are on springs, and can be quickly replaced at small cost should they break or wear out.

This implement tears up and mills the soil to any desired depth from a few inches down to a foot. One farmer who saw it scratching up the ground at a great rate gave it the name of the "steel hen." The tractor part has four speeds ranging from a little less than a mile an hour to three and one half. The revolving cylinder is five feet wide, and prepares from four to ten acres of finished seed bed in ten working hours, depending on the condition of the soil and the depth worked. The outfit costs $2,200 complete and takes one man to run it. By detaching the rotor you can use the tractor for other work.

Seed Bed in Short Order

FOR working in sod the cylinder is first set to run about two inches deep; that removes the toughest part of the sod. Then you go over the ground again and till the soil deeper. One of its operators says that these are the principal advantages of the machine: It pulverizes the soil perfectly and uniformly. It leaves no plow sole. It prepares a finished seed bed at one operation.

Another interesting plow is a combination disk and deep-tilling plow. The disks—two of them—can be set to plow a furrow ranging from 8 inches wide and 16 inches deep to 16 inches wide and 8 inches deep. Such a plow can be used for regular plowing as well as deep tilling. It is a riding plow and takes from three to six horses to pull it.

Deep-tilling plows may be had also in mold-board styles. These are not adjustable to widths of furrow, but they have other advantages, one of which is to stir the subsoil without bringing it to the surface. They also can go a few inches deeper than the disk deep-tillers.

A mold-board deep-tilling plow has a narrow throat, which means that the mold board is narrow where the share joins it. Consequently most of the subsoil will pass under it and fall back into the same furrow. But the top soil comes against the mold board and is turned over in the usual way. Unlike some of the old subsoiling devices, this method leaves no lumps in the bottom of the furrow to cause air spaces and make the soil dry out. At the same time the subsoil is gradually worked and improved.

Still another improved method of working the subsoil is to cut a gash half an inch wide and several inches deep in the bottom of an ordinary furrow so the air and moisture can get down. A special tool is now made for that purpose, or you can get an attachment that clamps onto the frog of gang plows and cuts the gash while you do the regular plowing. Using such a subsoiler in alternate furrows is sufficient.

But don't deep-till a loamy soil that has a sandy or gravelly subsoil. Instead maintain a plow sole that will keep surface moisture from running away through such loose subsoil.

The more general use of tractors, which is bound to come, will be the greatest incentive of all towards deeper tillage. Most men are humane, and even though aware of the benefits derived from deep plowing, they are not going to kill horses to do it.

But when those same men get a tractor they'll turn furrows eight, ten, and twelve inches deep—and more if they have deep-tilling plows. I've seen them doing it. Without exception every big plow factory has this year come out with one or more improved plows for use with light tractors.

One farmer who had a 35-horsepower tractor and a six-bottom plow said: "It's the only way to plow. Of course it takes quite a lot of capital to get rigged up with a good outfit, but from that time on you save money. I can break land for less than a dollar an acre."

The day I saw his outfit working it was plugging along at nearly three miles an hour in a drizzling rain. The furrows—six of them—were 7½ inches deep.

One man was running the whole affair. He drew three dollars a day and wasn't anxious to trade jobs with anyone. All the hard work was done with gasoline and steel, no horse labor at all except the occasional delivery of the magic fluid, gasoline, to the edge of the field.

Many farmers who have used the new light tractors believe the machines are easier to drive than horses, and you can plow straighter furrows with them

The gang plow had the power-lift feature, now so much in demand, by which the power that draws the plow also raises it out of the ground at will of the operator. Hand-lift levers are retained in some engine gangs as side features, but they are only for occasional use. In most cases the power to raise the plows is furnished by the largest wheel of the plow frame, but one manufacturer uses a compressed-air lift similar to the steam lift of steam-plowing outfits.

Another thing to consider in getting a power-plow outfit is a universal hitch. This means that a plow so equipped will work with any tractor. The old chain hitch is gradually giving way to the solid-bar type so you can back the plow out of an obstruction. On a few tractors arrangements are made for lifting the whole plow entirely off the ground so you can back right up to a fence and plow almost as close to it as you could spade.

Another development I have noticed in plows for use with tractors is simplicity.

The old styles of engine gangs had platforms, levers, and various adjustments each of which was simple enough in itself, but the whole implement gave you the idea that it would take the original inventor to make it work.

The newer plows are free from every unnecessary attachment, and look decidedly neat and trim besides being light in weight. Cast iron is giving way to steel; some plows are now 80 per cent steel.

The most popular sizes for light tractors are 14-inch three-bottom gangs. A few are made in the 12-inch size. Many of the new three-gang plows are designed so that the last plow can be detached if the engine is unable to pull all three.

One way of simplifying and strengthening the engine gang plows is to fasten all the beams together rigidly. But some manufacturers favor the individual-lift feature, claiming that a man should be able to lift any bottom out of the ground separately. He may want to clean a certain bottom or change the share or dodge an obstruction, or he may want to raise one of the plows out of the ground when going up hill.

One Maryland farmer was confronted by exactly this difficulty. Fortunately he had a plow having the individual-lift feature, and he used it to its full capacity. He found his eight-horsepower tractor could pull three 14-inch plows down-hill on high speed, but he had to throw it into low speed to pull a single plow up the slope.

The individual-lift feature is really important for plowing rough ground, but in a level field where the soil is uniform I doubt whether it justifies the extra weight and cost.

One excellent engine gang plow has strong springs between the beams, thus enabling each plow to dodge small obstructions without disturbing the other plows of the gang.

Another development engine gang plows have brought about is a decided interest in quick-detachable shares. You can easily turn over a walking plow and take the ordinary share off quickly enough to feel you're not wasting time, but an engine plow's a different proposition because it is big and heavy.

Shares That Save Time

THERE'S no choice but to get down on your marrow bones amid rolling colters and plow beams and wrestle with stubborn nuts—if you haven't quick detachable shares. Besides that you lose time. Horses would have to rest anyhow, and the time wouldn't count so much. But an engine plow standing still is a dead loss. Four plow concerns are now making a quick detachable share, two of which are new. On an average such shares can be changed in about one quarter of the time required in the old way, and there's less "monkeying."

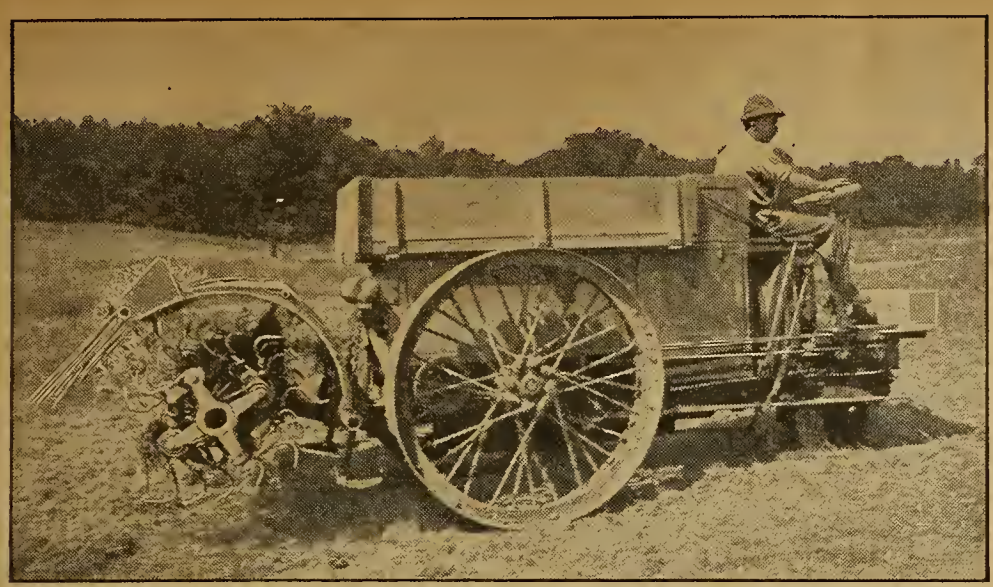
An important question which plow users will be called on to settle before long is whether the operator needs to see the furrows turn. A few tractors let the operator sit back of the plows, but with most you must ride on the tractor, and there's little chance to watch the plow.

One company anxious to be strictly up to date has developed a two and three bottom engine plow with these features: It has power lift. A slight pull on a cord raises the bottoms and another pull lowers them. When the plow is standing still you can lift the bottoms with a hand lever. It has interchangeable mold boards for stubble, breaking, and other uses.

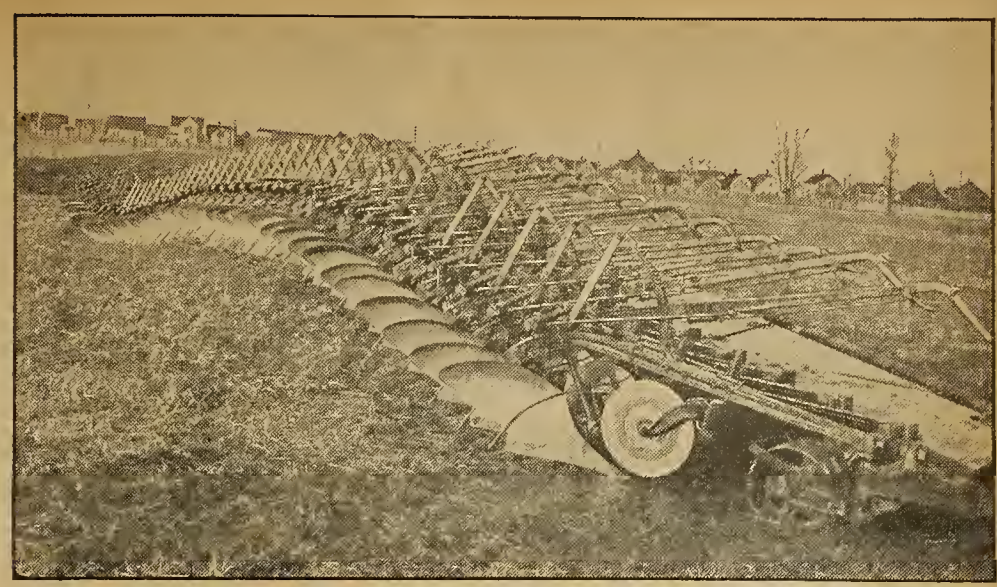
You can operate it from the tractor or you can put a seat on it and drive the tractor. By adding a few extra parts you can convert it into a regular frame sulky plow for horses. You can back it up if necessary, and it costs $150.

This plow lacks the individual-lift feature and quick detachable shares. But it has a pin-break standard. In this construction the beam is pivoted between two other beams and is prevented from swinging backward and upward by a cast-iron pin which breaks when the plow strikes a large stone or other obstacle. Preventing damage to the plow is the principal value of the pin-break feature, but it also enables you to lift the plow up for changing shares. This particular company claims the cast-iron break pin is better than the wooden break pin, being more uniform in strength and freer from the tendency to bend and increase the suction of the share.

Few new engine plows have over five bottoms, and most have only three. A manufacturer who makes a ten-bottom engine plow believes that the general farmer can get more service out of two five-bottom plows than from one ten-bottom. But for a rush job of plowing on large ranches he favors the combination gangs made possible by patent couplings. With these you can make a plow of limitless size. The one shown in the picture is a 45-bottom plow, and this picture was



The work of a plow, a disk, and a harrow is done in one operation by the "rotary tiller." It can pulverize the soil to a depth of one foot



This 45-bottom plow is used on a large grain farm for rush jobs of plowing. Three tractors are needed to pull this outfit

taken after ten of the bottoms had been removed. Three tractors are needed to pull this giant outfit.

But in all the plow family, nothing I have seen anywhere is more impressive than the great grub breakers. The picture of the half stump shows the work of a grub-breaking plow. It has a duck-bill cutter that first split the stump. The share sliced off the roots and the mold board threw it out of the ground. A duck-bill cutter is a strong knife colter that begins right at the plow point and then slants obliquely backward.

Such a cutter will split or slice off anything that an ax will cut, so there is no danger of the plow ramming into a stump and stalling the plow. With a pull of 45-horsepower on the draw bar this plow turns a furrow a foot deep and two feet wide right through the worst kind of underbrush, mesquite, small trees, and similar raw land. The entire plow is about ten feet long, weighs a ton, and runs on three massive wheels.

A Likely-Looking Lister

A NOTABLE improvement in listers is now nearly ready for the market. This new lister has gauge wheels on the sides so that each successive row is gauged from the preceding row. Anyone who has done listing knows the importance of getting the rows at equal distances apart. Otherwise when you fill in the furrows with the soil between them you will have too much soil for some rows and not enough for others.

The gauge wheels of the new lister have rounded edges so as to follow the previous furrows easily, and also an open tread like a corn-planter wheel that does not pack the soil over the seed. The lister runs at a uniform depth and has adjustments for keeping it level in all kinds of ground. The machine will be on the market next spring, and it looks like a good thing.

Two attachments for plows have lately appeared that are worth comment. One is known as a jointer colter. This is simply a rolling colter and a jointer combined. The jointer works on the side of the colter behind and below the axle. As the colter cuts the path for the plowshare the jointer, acting like a little plow, turns all weeds and trash onto the furrow slice. Then the mold board turns it all under completely. This keeps trash out of the bottom of the furrow where it would cause air spaces in the soil and consequently cause the soil to dry out. The price of this contrivance is $5.

The other attachment is called the double-disk jointer harrow, but is gradually winning the simple name of the disk colter. It is simply a disk used on the plow beam in about the same manner as a rolling colter. But the disk has considerable "dish," like the disks on a disk harrow. It is set at a slight angle, with the convex side toward the land (like a disk plow) so as to disk the furrow just ahead of the mold board.

The proper depth for this attachment to cut is about one half the total depth of the furrow. It may be had in either single disk or double disk, the latter for use on gang plows. The advantages of disking before plowing are many and well known, but the great disadvantage is that the horses must walk on soft, loose ground when you plow. With the device mentioned the disking is done back of the horses and ahead of the plow. Consequently the horses have firm ground to walk on. "Some users," the manufacturer told me, "have had trouble getting it adjusted properly, but those who have made it work as intended, are well pleased." It's a farmer's invention and sells under royalty at $4 for the single disk and $8 for the double disk size.

Altogether perhaps twenty other modern plow improvements can be put down to the credit of the manufacturers and designers for this year's work.

One company has decided that a solid rear wheel for sulky plows is stronger, steadier, and altogether better than a spoke wheel. Hereafter all its plows will have solid rear wheels. Another concern has adopted an extremely long axle completely enclosed so that greasing once a season is sufficient.

A company that studies plowing methods carefully has put all the levers of its latest sulky and gang plows on the right-hand side for convenience in operating and also in getting into the seat from the left-hand side. Several companies have an excellent light-draft harrow attachment for riding plows. These do immeasurable good in breaking up clods before they dry out and harden. They save valuable moisture too.

The ease with which trees and other obstructions can be plowed around is one of the features of this simple walking gang

Nor has patient Dobbin been overlooked. One new plow has a spring clevis to ease the strain on the horses' shoulders when the plow strikes a stone. Another sulky-plow improvement is a lever control for shifting the clevis so as to straighten crooked furrows, also to guide the plow straight should the team be unsteady or have to walk irregularly, as in plowing corn rows.

The workmanship in the newest plows appears to be about the same as in the older styles—perhaps a little better. The chief advantage of the newer plow designs is the less attention demanded of the operator and the greater ease of handling them.

Nearly all the large plow companies now have their own farms and testing grounds. These are not simply flat meadows, nor are they little playgrounds. They are real farms, including hillsides, ditches, and obstructions, so that a plow gets plenty of rough treatment. In fact, the farms are really as much a part of a modern machinery establishment as are the shops and offices; and manufacturers attach the utmost importance to the results of field tests.

"The day is past," said one official, "when testing a farm implement is done at the expense of the farmer. A modern manufacturer has to have his own testing grounds, and if a machine fails to work properly he ought to know it before anyone else. It costs money to develop new machinery, and the sooner we know good from bad construction the quicker we can save in the cost of manufacturing."

The Biff-Bang Test a Poor One

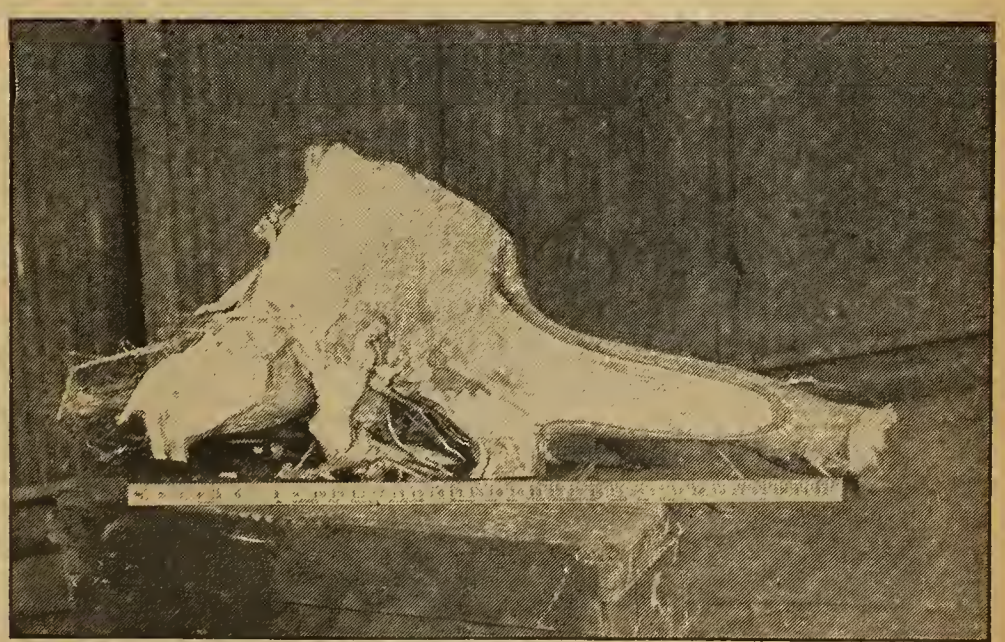
ONE of the old spectacular ways of "testing" a plow for an audience was to take a good-sized machinist's hammer and biff-bang all over the plow. A good demonstrator who looked strong and who knew where to hit could make a lot of noise that way and perhaps impress his audience. Some might even buy the plow on the strength of his demonstration.

Any implement made of soft steel or malleable iron will stand such a test, but that is no assurance the plow will scour, or have light draft, or resist the abrasive action of sharp, sandy soil. In other words, the test given to any plow should be along the same lines as the kinds of usage the plow is likely to have in its every-day work. The right way to select a plow is, therefore, on the requirements of your soil and not on the sledge-hammer basis.

And just a few remarks on how the safety-first campaign has improved factory conditions. In one large shop all dangerous parts of machines that cannot be fully enclosed are painted bright red as a danger signal. Another factory has suction drafts over the emery wheels to carry away the emery dust and fine particles of metal that the operator would otherwise inhale. Half of the men employed have been there over ten years. Another concern has a medical department where injuries are treated and free service is given to employees so men won't lose time through sickness.

NOTE: Further information concerning any machinery mentioned in this article will be given on request. Or if you have any questions concerning the best implements for doing your work, tell us your requirements and conditions and we will help you.—EDITOR.

With a pull of 45-horsepower on the draw bar, this grub-breaker plow turns a furrow a foot deep and two feet wide in underbrush



The duck-bill cutter of the grub-breaker plow split this stump, the share sliced off the roots, and the mold board threw it out of the ground

FARM and FIRESIDE
THE NATIONAL FARM PAPER
Published every other Saturday by
The Crowell Publishing Company
Springfield, Ohio

Subscription Price
One year (26 numbers), fifty cents. Three years, one dollar. Extra postage for Canada, twenty-five cents per year.

About Advertising
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HERBERT QUICK, - - - - - - - - Editor

July 17, 1915

What Children Might Do

WE ALL sympathize with the laws against child labor, but every farmer knows that the right sort of work is as beneficial to the child as to the man or woman.

There is something inspiring to the child in the consciousness of being useful.

Doctor Claxton of the United States Bureau of Education has estimated that if one third of our thirteen million school children were to engage in the cultivation of back yards, vacant lots, and other available ground, under competent instructors, they would add the sum of $200,000,000 annually to the national wealth, and be enabled to remain in school for from three to four years longer on the average before quitting to become breadwinners.

Doctor Claxton seems to have in mind city rather than rural schools, but his conclusions are most valid in the country. It is easier to find productive work, at the same time interesting and truly educational, for children in the rural schools than in the city.

In the canning clubs, the pig clubs, and the various other school activities in which the country children are finding so much education and happiness, we have only the dawning of an era in which such work shall be a source of real wealth to their homes and neighbors—and the cause of true education will be enormously benefited.

Large and Small Farms

STUDY of fifty-four farms in Nebraska indicates that the large farms are more profitable than the small ones. The survey was made by the U. S. D. A. in co-operation with the state college people.

Yes, the large farm is more profitable than the small.

More profitable for whom? For its owner.

For the nation? No.

For all the men working the land? No.

The large farm is more profitable for its owner than the small farm because he is able to get benefits from other people's work. He can also enforce the economies of large-scale operations.

But the best thing for the nation is, as of old, "a little farm well tilled."

If the large farm could be tilled co-operatively and the profits divided among all the workers, it might not show so much superiority over the small one.

The man on the small farm must usually choose, not between a small and a large one, but between a small farm and no farm at all.

Enlightened statesmanship will look toward the establishment of institutions under which the ownership of land divorced from its tillage will not be profitable. Then, if the large estate persists, it will be on some basis different from the present, and under which the products will be divided according to the labor, physical or mental, furnished.

There is not enough land to give each of us one of these large, profitable farms.

If the greater profits in extensive farming shall cause the land holdings of the nation to increase in size from decade to decade, there are some things in the present condition of Mexico well worth the study of those who love their country; but if the small farm can be made the rule we may, out of the experience of such nations as Denmark, look forward to the time when we shall maintain five hundred million people in the United States in comfort and happiness.

Because a thing is, we must not always admit that it ought to be.

Free Fairs

ONCE many of our roads were toll roads, with gates at which travelers had to pay. As soon as the public roads were introduced they became the rule. Now there are toll roads in very few localities, and those localities have no reason to be proud of their presence. Toll bridges are rare now, and are recognized as survivors of a time when the general benefits of free travel were not recognized.

All really civilized countries provide for the education of the youth of the land at public expense as a matter of course.

Now comes Kansas with a free state fair. The city of Topeka and Shawnee County have taxed themselves to make it free.

Will the rest of the States be obliged to follow suit, or be classed as back numbers? The right sort of fair is as distinctly a matter of public education as the schools. Those things which are not of that sort do not belong on the fair grounds perhaps. Many things usually seen at the fairs because they are money-makers for the association may be dispensed with when the premiums are paid from other sources than gate receipts.

Kansas may have started something in the way of an era.

A flock of sheep will keep the fields, corners of fields and fence rows, and pastures free from weeds. The wool many times pays for the feed and care, and leaves the lambs as the profit for the owner

The Labor Supply

ONE of the best-informed men in the United States on the supply of farm labor is Leonard G. Robinson of New York, who is the head of a society which finds farm jobs for Jewish immigrants and other members of that faith who wish to become farmers.

The society has two bureaus, one at 174 Second Avenue, New York City, and another at 706 West 12th Street, Chicago.

"The demand for farm labor," says Mr. Robinson, "is far less this year than for the past few years. The young men of rural birth thrown out of employment in the cities have started a back-to-the-farm movement, and thousands of them are back helping the old folks. I have at least twenty men for every farm job."

Mr. Robinson's society charges no fees to either the employer or the employee. It is one of the best of philanthropies, as it brings the man and the job together. It deals with farm labor exclusively, and is supported by people who believe in getting the young men out upon the land.

"Foot-and Mouth" Curable

WHEN the foot-and-mouth disease quarantine seized the live-stock industry, the best dairy herds in the country were caught in the infected area, and in an infected condition at the great National Dairy Show in Chicago.

The government inspectors condemned these cattle to death. If the sentence had been carried out, pure-bred dairy cattle for breeding purposes would have been made scarcer, and the best strains, some of them, would have been almost extinguished.

Their owners made a fight for the lives of the cattle. The cattle were isolated and allowed to recover.

The inspectors protested against trying to save the cattle, but the owners prevailed. The stalls, the yards, the approaches, the animals, were disinfected. Then, after the animals were clearly well, the question was to be determined as to whether they were still carriers of foot-and-mouth disease. They were taken from their barns by slow degrees, and at every step test cattle were "exposed" to them. None of the test cattle got the disease. The blue-blooded cattle were "clean." On May 31st they were released with a clean bill of health.

So foot-and-mouth disease is not incurable. Where the infected cattle are valuable enough to pay for the trouble, it pays to save the stock. Probably the most economical way to deal with the average herd is to have them killed, and paid for. But the victory won by the owners of these breeding cattle is a valuable one for the cattle industry.

Our Letter Box

Looks to the Future

DEAR EDITOR: I have been trying to find time to write this letter for two months, but just haven't. First it was too cold, now it's the most gorgeous spring any human mind can realize, and it seems almost a sacrilege to do just necessary things. We don't have much spring in Florida, but what we do have is borrowed straight from the fields of Paradise.

Jacksonville has a population of about 95,000, and twice that many sparrows, so we don't try much alfalfa in our back yards and window boxes. I take FARM AND FIRESIDE because I hope some day to have a home in the country. Then maybe I can help you with cowpeas, and alfalfa, and heaps of things.

MRS. J. C. DURRANCE.

R. F. D. Economy

DEAR EDITOR: From reading the government crop reports one would suppose the farmer was getting rich by the minute. I would like to see plain figures and arguments talked over by the farm papers to place the situation in its true light. Not how to raise large quantities, but how to sell quickly and to advantage.

The man in the city feels faint when called upon to pay 8 or 10 cents a quart for his milk, because he knows nothing about the real cost of producing it under present conditions. The same with eggs at 50 cents per dozen. Does he realize that it takes time to raise the chickens, and that there are many losses in doing this, and work, time, and capital invested?

The farmer is the good old fellow called the backbone of our country, who is always on the job working his good twelve or more hours a day. He pays his share of taxes both national and state.

However, when things get a little tight in our national finances, and the talk of economy begins, why commence on the farmer? An easy mark!

Some time ago the writer of the Farmers' Lobby spoke of the high cost of rural delivery, the only thing the farmer has got for his money since the beginning of time in the Garden of Eden.

Until a few years ago a rural carrier could not afford a decent rig and live. These men who carry on 24-mile routes under the new bill get $1,200 a year.

If you figure that down it means a trifle over $3.30 per day, and every day under every condition of weather and roads.

According to the Post-Office Department the rural carriers are rated the highest for honesty and good behavior of any in the postal service. That is what the farmer wants and is going to have. MRS. G. E. SMITH, New Jersey.

Do All the Farm Repairs

EDITOR FARM AND FIRESIDE: President Wilson was elected by the people of the United States to make the American farmer compete with the peon and pauper labor of the world, and to reduce the cost of living of the persons living in the city.

And this after the city persons had the wages higher and the hours fewer.

After I realized the turn things were taking we added to our constructing and repairing facilities, until now we have a blacksmith shop and tools for doing all the repair work with wagons, pumps, cement, harness, and plastering.

We do our painting and paper-hanging.

After the price of shoes became so high, we added to our equipment a leather-sewing machine, button-fastening machine, iron lasts, nipper, awls, iron, and brass clinch nails for the repair of shoes.

We have also installed a steam-pressure outfit for canning fruit, vegetables, and meats of all kinds. Every member of the family does some of the work on the farm, has some musical talent, and a great love for flowers.

WALTER DIETZ, Nebraska.

Railroads Waste Oil

EDITOR FARM AND FIRESIDE: The railroads can give the farmers estimates on the savings effected by the installation of silos on the farms. These same railroads waste oil that goes to lubricate the internal bearings of locomotives equal to the cost of moving a ton of the farmer's freight 9.629 miles the engine annually. This scheme on the part of railroads to contribute to the profits of the Standard Oil Company is equivalent to the lightning-rod and Bohemian oats swindles practiced on the farmers years ago.

Why not turn the light on the railroads? D. MOREHOUSE, Illinois.

E-W

Save $40,000

How Colorado Farmers Control Cholera

By W. F. WILCOX

FOUR hnndred thousand dollars was the loss from hog cholera a year in the San Lnis Valley in Colorado before the farmers organized an association to fight the disease. Only two farms in the valley snffered losses from cholera last year. And the disease is nnder control.

The Monte Vista Hog Growers' Association is the name of the organization. It is an example of the power of organization and co-operation among farmers.

Hog-growing is the chief industry of the San Lnis Valley. Field peas are grown extensively. The hogs are turned into the fields to harvest the crop. Nearly every farm in the valley had been visited two years ago with cholera.

The Monte Vista Hog Growers' Association was the first organization of its kind in the San Lnis Valley and, many persons believe, in the United States. The efficiency of co-operation was made manifest, and the farmers rallied with magnificent team work to redcem the valley. Hog cholera had swooped down into a valley which it had been claimed was free from cholera invasion.

The membership fee of the association was fixed at $10. Dr. P. C. Gnyselman, a veterinarian, was employed by the association. He was made a depnty sheriff and started out with instructions from the agricultural college to clean up hog cholera. He snccceeded so well that in ten months' time cholera was completely under control. In the sonth end of the valley, among the Mexicans, there are a few cases of cholera. These hogs are under strict qnarantine and the disease will be eradicated.

The plan of control adopted in the San Luis Valley inclndes qnarantine and disinfection. Anti-hog cholera sernm was nsed freely, bnt virnlent blood was not used for simultaneous vaccination.

Vaccinates 2,940 Hogs

During the first year of the association, ending Febrnary 1, 1914, Doctor Gnyselman made 823 visits, an average of 2.34 a day, and vaccinated 2,940 hogs. During this time there was received from membership $1,600, donations $804.50, and fees from non-members for veterinary services $70.25. After dednct-ing expenses there was a balance of more than $200.

Doctor Gnyselman is employed by the association. When he is not working in the interest of hog-cholera control he gives his services as a veterinarian to the members of the association without price.

A similar organization was effected at La Jara in the valley, but has not been qnite so successful as the one at Monte Vista.

The Monte Vista Hog Growers' Association gives social gatherings two and three times a year. The annnal banqnet and hog roast is given every February. Three hnndred men attended the last hog roast. Five large roast hogs were served with all the "trimmings." The program inclnded several addresses snitable to the occasion. The annual picnic of the association is given July 4th.

The success of the organization is being watched throughout the entire Middle West. The methods adopted and employed by this association in combating the hog cholera are receiving the approval of the best informed men engaged in hog-cholera control in the United States.

These are the rules that the association uses to prevent cholera:

The prime factor in the control of hog cholera is sanitation and care of the hog. Keep the hogs in a healthy condition by the use of properly balanced feed. Avoid sndden changes of feed—they ofttimes cause bowel disorders. See that the water supply is pnre and wholesome. Filthy, stagnant water and water from ditches are probable sonrces of disease. Clean water is a necessity for the health of the hog. And this is nsnally the least expensive ingredient in the make-np of the hog, and at the same time the most important. It should be snpplied in abundant quantities.

Provide a wallow or shallow vat for the hog, and he will dip himself and keep free from lice and other germs. Have a good dry shed, free from drafts, for his sleeping quarters. A straw stack is absolntely unfit for hogs to sleep in. They burrow into the stack, become heated, and upon coming ont are in prime condition to contract pneumonia. Clean this shed out weekly and sprinkle lime freely about.

Keep your neighbors, their hogs, and their dogs away from your hogs and pens.

The time to clean up is before the disease gets into the herd.

Feed Hog Tankage

TANKAGE is sold by the packing honses, and is made of meat offal. It contains 60 per cent of protein and 15 to 17 per cent mineral matter. Both the protein and the mineral matter are of the sort needed in the animal body, becanse they are derived from the animal body.

The Minnesota Agricultural College has fonnd by test that tankage at $50 a ton is a more profitable concentrate for swine the bulk of whose ration is corn, than is oil meal at $36 a ton. The oil meal contains 31 to 33 per cent of protein and from 5 to 7 per cent of mineral matter.

The tankage ration was made np, to each hnndred pounds, of about 85 pounds of corn, 7½ ponnds of tankage, and the balance shorts.

A hundred ponnds of the oil-meal ration contained abont 78 pounds of corn, nearly 14 ponnds of oil meal, and the balance shorts. The cost of gain with the tankage was $4.32, and on oil meal $5.27 per hundred pounds. Corn was figured at 50 cents a bushel, and shorts at $26 a ton.

The nse of corn as the sole feed is known to be wasteful. It pays to bny rather than to go withont the protein and the mineral matter which corn lacks. The bnilding of an animal's carcass withont the right materials is as unwise from the standpoint of economy as it would be to build a whole barn of three-inch planks. It can be done, but not with a profit.

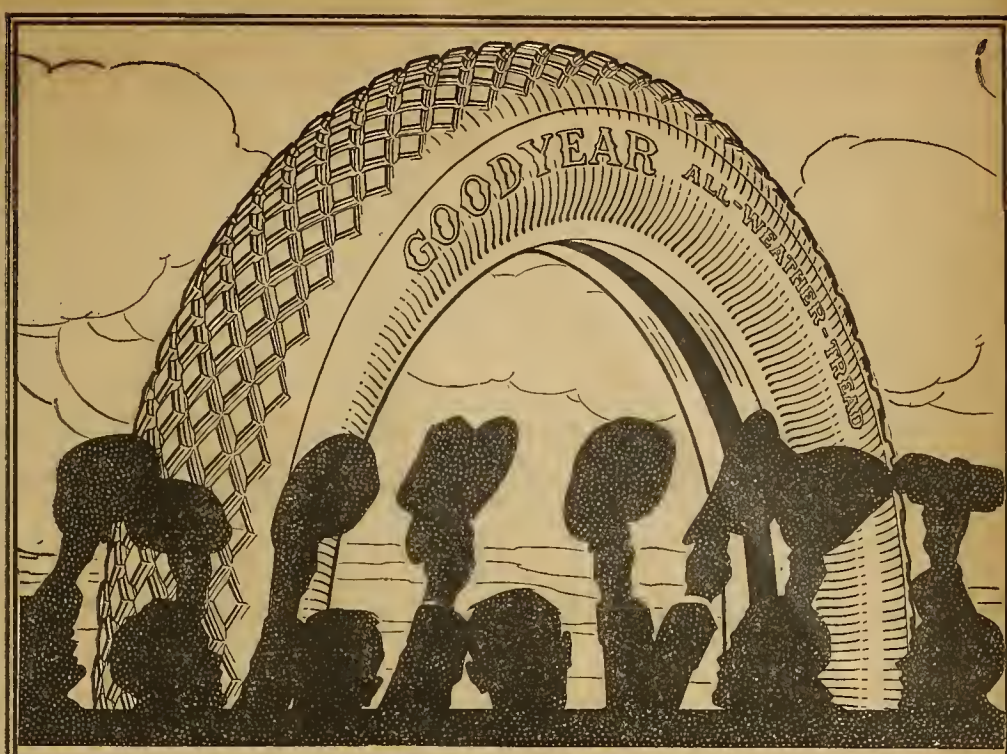
The college experts state as their view that both tankage and oil meal may be nsed nnder Minnesota conditions with profit.

Probably variety in the ration would prodnce unexpected benefits. All live stock like variety.

Appetite is a thing to be studied. When an animal's mouth waters for its food it will thrive on that food. You can bank on that.

Nature is a wise old dame.

Here is a drove of pea-fed hogs in the stockyards ready for loading. One of the first shipments of pea-fed hogs from the San Luis Valley consisted of six hundred head



Goodyear Fortified Tires

Cost Users $5,000,000 Less

This year's price reduction—made February 1st—was due to lower cost of materials and our larger output. It will save Goodyear users, judged by current output, about five million dollars this year. And that, remember, was our third reduction in two years. The three total 45 per cent.

We cite these facts before we tell you of some added factory costs.

Goodyear Extras Cost Us $1,635,000

Goodyear Fortified Tires embody many extras. That's why we call them Fortified.

Five of those extras are costly features found in no other tire. The rest are quality extras which few makers employ.

If we omitted them all, we could save on this year's probable output $1,635,000. We could add that much to our profits. Yet Goodyear tires would appear to be just as good as now.

Users Would Pay

If we did that, Goodyear users would lose in tire wear many million dollars. For every extra we employ adds mileage and saves trouble.

There would be more rim-cuts, more blowouts, more loose treads. There would be less rubber, less fabric.

Yet five of those extras are used by Goodyear alone, and the rest are used by few.

This Year's Additions

This year's improvements—just our latest additions—will cost us $500,000 this year. All to give you extra wear. And we shall spend $100,000 on research this year to find more improvements for next year.

Think of these things—you who buy tires blindly. Tires are not alike. But these differences are hidden. So tires may look like Goodyears and not be half so good.

Remember this: Goodyears won their place on service. It is the highest place in Tiredom. It is super-service, proved by millions of tires, that makes them outsell any other. And that super-service is due to these extras. Get them. Any dealer will supply you.

GOODYEAR
AKRON, OHIO
Fortified Tires

Fortified Against
- Rim-Cuts—by our No-Rim-Cut feature.
- Blowouts—by our "On-Air" cure.
- Loose Treads—by many rubber rivets.
- Insecurity—by 126 braided piano wires.
- Punctures and Skidding—by our double-thick All-Weather tread.

THE GOODYEAR TIRE & RUBBER COMPANY
AKRON, OHIO

Makers of Goodyear "Tire Saver" Accessories; Also Goodyear "Wing" Carriage Tires and Other Types

(2421)

Here is a view of the South Gardens and the Tower of Jewels at the Panama-Pacific International Exposition at San Francisco. This stately tower stands guard over the eleven main exhibit places

The magnificent Palace of Fine Arts stands out as clearly at night as during the day under the soft glow of the thousands and thousands of diffused electric lights. A visit to the Exposition at San Francisco is not complete without including a trip through the Palace of Fine Arts. The palace is a great treasury for the world's wealth in art. The lagoon in front of the palace is very beautiful. Great crowds promenade around the lagoon at night

The Tower of the Setting Sun is in the Sunken Gardens in the west end of the Court of the Universe. Many thousand Exposition visitors have seen and admired the Tower of the Setting Sun

The Palace of Fine Arts is one of the most beautiful buildings at the Exposition. An artificial lagoon is shown in the immediate foreground. The palace is a popular place for sightseers

The Sunken Gardens in the Court of the Universe at the Exposition are both beautiful and interesting. In the rear is shown the Arch of the Rising Sun. This arch is surmounted by the Nations of the East. Some of the many varieties of flowers in the Sunken Gardens are in blossom all the time. This is accomplished by planting flowers that bloom at different times. The Sunken Gardens are one of the many show places of the Exposition

Taking a Trip Through a Great Exposition

The stately colonnades of the magnificent Palace of Fine Arts are an architectural feature of the Panama-Pacific Exposition. Prominent artists have their work on exhibition in the Palace of Fine Arts

Free Offer

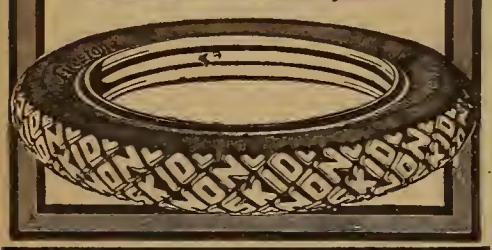
EVERY CAR OWNER will appreciate this fine rubberized, waterproof Tube Bag. Send us your dealer's name and address and the make of tires you use and we will send one free. It will keep your Inner Tubes in prime condition.

Firestone
TIRES and TUBES

give you most miles per dollar because we give them most quality at the factory. The low prices are due to great volume production by the world's specialists in America's Largest Tire Plant. Any dealer will supply you.

Don't forget to write for Tube Bag. Get book No. 46, on the "Care and Repair of Tires." Address

Firestone Tire & Rubber Co., Akron, O.
"America's Largest Exclusive Tire and Rim Makers"
Branches and Dealers Everywhere



Write, Phone or Wire!

WE have the stock and can make immediate shipment, enabling you to preserve 100 per cent of your corn crop in the

INDIANA SILO

Easy to erect. No special tools or skilled labor needed. Every stave guaranteed. You pay for the Indiana Silo out of what it saves on feed bill. Address nearest office.
THE INDIANA SILO CO.
Anderson, Ind. Des Moines, Iowa
Kansas City, Mo. Ft. Worth, Texas

ABSORBINE
TRADE MARK REG. U.S. PAT. OFF.

Will reduce **Inflamed, Strained, Swollen Tendons, Ligaments, Muscles or Bruises.** Stops the **lameness** and **pain** from a **Splint, Side Bone** or **Bone Spavin.** No blister, no hair gone. Horse can be used. $2 a bottle delivered. Describe your case for special instructions and Book 2 K Free.
W. F. YOUNG, P. D. F., 284 Temple St., Springfield, Mass.

Only $2 Down
One Year to Pay!

$24 Buys the New Butterfly Jr. No. 2. Light running, easy cleaning, close skimming, durable. **Guaranteed a lifetime.** Skims 95 quarts per hour. Made also in four larger sizes up to 6 1-2 shown here.

30 Days' Free Trial Earns its own cost and more by what it saves in cream. Postal brings Free catalog, folder and "direct-from-factory" offer. Buy from the manufacturer and save half.

ALBAUGH-DOVER CO. (12) No. 5½
2159 Marshall Blvd. CHICAGO

Good Bye Mr. Louse!

No more dipping or spraying. Keep your herd healthy and free from vermin and parasites with a

National Automatic HOG OILER

Works like magic. Strong, durable and simple. Can't get out of order. Price only $7.50. *Thirty days' trial.* Satisfaction or money back. If your dealer will not supply you do not accept a substitute but *write to* National Factories, Inc. Dept. C., Richmond, Ind.

$15.95 Upward ON TRIAL
AMERICAN CREAM SEPARATOR

A SOLID PROPOSITION to send **fully guaranteed,** a new, well made, easy running, perfect skimming separator for $15.95. Skims warm or cold milk, making heavy or light cream. The bowl is a **sanitary marvel;** easily cleaned.
ABSOLUTELY ON APPROVAL
Different from this picture, which illustrates our large capacity machines. **Western orders filled from Western points.** Whether your dairy is large or small write for our handsome free catalog.
Address:
AMERICAN SEPARATOR COMPANY
Box 4058 Bainbridge, N. Y.

Farm Notes

Our Little Victory

By an Indiana Farmer

THIS is written in January, 1915, on a little 10-acre farm in Indiana—if I may call ten acres a farm. Anyhow, it seems like a real domain to a man who not so very long ago was working by the day in a city.

It was one the 10th day of April, 1911, that we moved from the city to a farm. I went to work for a tenant farmer at a dollar a day, and I had a cow to milk and the privilege of raising chickens—both on shares.

These things almost any married couple can get on a farm, and they make up quite a bit of the living. Maybe the reason why so many city people fail to make a successful start in the country is because they want to start on too big a scale.

The bumblebee is the only prosperous creature I know of which is biggest when it is born.

I had a good man to work for, but the first two weeks were a gloomy time for two reasons. It rained most of the time for one thing, and for another I got no wages when it rained. We managed to exist, but it was a tight squeeze. When we should have had something from the garden, we found that we hadn't made a success of it. About all we got was from our chickens.

My employer gave up the farm, and we had to move. I got a place with a man who was feeding cattle, and this gave me work every day, rain or shine, at a dollar a day. I thought I had surely struck it lucky.

I saved enough at this place to buy me a cow, and to partly pay for a mare I fancied. I also got a surrey and a set of harness at a sale. Things became unsatisfactory, and I made up my mind I would get out of the rut of working for someone else.

I rented a 10-acre place, and launched out as a "farmer." My mare had brought me a nice colt, and I had kept my cow and the chickens. I traded the colt for an old mare, and bought another old horse and a set of work harness with money I picked up at odd jobs, and a friend made me a present of a plow. I rented 15 acres more on grain rent, and planted all the 25 acres to corn except our garden, and three acres which went into millet for hay.

We had to live, and where the living was coming from while the crops were maturing nobody seemed to know; but my wife answered the problem. She set up as a merchant. She gathered up all the butter of the neighborhood, and on Saturdays she sold it in the city to regular customers. Also she dealt in cottage cheese at a good profit. In fact, by gathering up her load on Friday evening and being in town early on Saturdays, she often made as much money as I had formerly earned working hard all the week.

I had good success with my crops, and at the end of the year I found I had enough to pay my rent, buy a wagon and cultivator, and pay off some little notes—all of which amounted to about $400. I have plenty of feed for the season, and am starting off clear for my second year. I have succeeded beyond my expectations, and I believe there is success for the fellow who will stick to it.

When to Cut Sweet Clover

AN ESTABLISHED field of sweet clover may be mowed for hay two or three times each season. The first cutting should be timed to take place just before the crop blooms.

It must not be cut close or the plants will be killed.

In this it is different from other hay plants. The stubble should be left so high that there will be a branch or two on each plant.

The second cutting should be done in the same way, leaving the stubble a few inches high. The last cutting may be close to the ground.

The second and third cuttings should be made before the hay becomes coarse. That is about the only rule to follow. Experience will soon give judgment in this.

Woody stems should be avoided, and to this end it is better to cut when it seems that a little more time would make a heavier crop of hay. If this method is followed, there will be no third season, as sweet clover is only a two-season plant.

The above directions are for the second year, or any later year if the stand is maintained by self-seeding. A first year's crop should not be cut until the sprouts begin to shoot at the crowns—like alfalfa.

It is usually not well to attempt to get more than the one crop of hay the first season.

A sweet-clover field may be maintained permanently by the process of pasturing half of it until the other half can be cut for seed. This will seed itself through shattering, and the straw will have much feeding value.

In a few days after the seed crop is removed it will be ready for the stock's pasturing on the other half of the field, which in its turn will bring a good crop of hay before the end of the season.

As long as sweet-clover seed is as high as now, this would seem a plan worth study.

How Are Your Roads?

HOW are your roads, my friend?
Can you spin along by day or night?
Are they smooth and hard and built just right,
A pleasure without end?
Or are they full of fish and frogs,
And submarines and pollywogs?
How are your roads, my friend?

Drag the Roads

WHEN the smiles of spring appear,
Drag the roads;
When the summer time is here,
Drag the roads;
When the corn is in the ear.
In the winter cold and drear,
Every season of the year,
Drag the roads.

When you've nothing else to do,
Drag the roads;
If but for an hour or two,
Drag the roads;
It will keep them good as new;
With a purpose firm and true,
Fall in line; it's up to you—
Drag the roads.
—The Kansas Industrialist.

A KANSAS CITY inventor named Cherry is setting up as a rival of Doctor Rittman, the Bureau of Mines man who has developed a plan to make more gasoline out of crude oil. The Kansas City man claims that he can treble the output of gasoline per barrel of low-grade oil.

Farmers as Engineers

A MANUFACTURER of gas engines says that in proportion to the number sold, fewer complaints come from farmers than from any other class of buyers. Most of the troubles and complaints, in fact, arise in machine shops where you would suppose the engine operators would be most expert.

The explanation is simple. Farmers nearly always own and operate their own engines, whereas in machine shops the engines are run almost entirely by employees. Another case of poor results following absentee ownership.

She Swallowed a Nail

By Alton D. Spencer

A FARMER near Hastings, Michigan, owned a cow that became sick last November. A few days ago she died. A veterinarian made an examination of the inside works and found a seven-penny wire nail inside the heart sack. The head of the nail was still inside the stomach, so that when the stomach was full the point of the nail would pierce the wall of the heart.

THE Farmers' Association of Gage County, Nebraska, made a campaign for killing pocket gophers in April. They estimate that the average farm is damaged from $10 to $100 a year by these velvet-coated cave dwellers. The slogan for Gage County is, "Protect the natural enemies of the pocket gopher, the bull snake and the owl!"

Ten-Second Topics

TWO hundred thousand farmers of Denmark have adopted a resolution favoring the abolition of duties and taxes on articles of consumption. They ask that taxes be imposed on land values exclusive of improvements.

THE strawberry should never be touched in picking. Take hold of the stem.

AN IOWA farmer reports good results with ten acres of brome grass on rather rough land. How many of our readers have sown brome grass, and how do they like it?

MANY farms are named with the syllable "mere" as a part of the title—"mere" meaning "lake;" but an Ohio farm is called "Justamere Farm" for another reason.

THE old device of mixing plaster of Paris with dry rat feed is worth remembering. The plaster of Paris will not kill chickens. They need stones in their crops. But it does kill a rat or a mouse.

A SPRINGHOUSE or a refrigerator is the ideal thing for keeping milk cool, but millions of pounds of good butter are made every year with no better equipment than a tank for the cans filled with a pump from a well.

CONCENTRATED lye water in shallow stone- or graniteware dishes will kill rats and mice if they are baited into it with the proper lure. Just enough of the lye to wet their feet and not enough to make them afraid to wade in.

THOSE unemployed in the cities are not buying farm products. Those in the cities who are getting low wages are buying as little from us as possible. A prosperous working class in the city is the only recipe for prosperous farmers.

CONGRESSMAN sent seeds to farmer. Farmer acknowledged shipment in the following words: "I have received the seeds. It says on the envelope 'Penalty for private use $300.' I don't know of any public use I can put these seeds to, and am sending them back. My needs are all private, not public. Yours truly."

BUY a Babcock tester—or borrow one. Also a spring-balance scale. Test your cows' yield of butterfat at least once a month; better still, every two weeks. You will in all probability find that one or more of the animals is losing you money. If she doesn't give at least 250 pounds of butterfat a year she is worth more to the butcher than to you.

AGAIN we mention the caustic potash method of dehorning. The potash can be bought in sticks. As soon as the budding horn can be felt take off hair and dirt, and burn the "button" with the potash over a spot as big as a dime. To do this wet the potash and rub it on the spot. Don't handle the potash with the bare hands. Keep the calf in out of the rain for a day or so after the operation.

AN UPHOLSTERER gave this recipe for furniture polish to a friend as a professional secret: Take equal parts of raw linseed oil and vinegar, and add to each quart of the compound two tablespoonfuls of spirits of turpentine. Apply with a soft flannel cloth saturated, and wipe immediately with a dry flannel cloth. It is recommended for furniture of the finest polish, for varnished floors and woodwork, and for leather-covered furniture. This preparation is bottled and sold as furniture polish by the best dealers.

CHANGE THE VIBRATION
It Makes for Health.

A man tried leaving off meat, potatoes, coffee, etc., and adopted a breakfast of fruit, Grape-Nuts with cream, some crisp toast and a cup of Postum.

His health began to improve at once for the reason that a meat eater will reach a place once in a while where his system seems to become clogged and the machinery doesn't work smoothly.

A change of this kind puts aside food that is slow to digest and takes up food and drink of the highest value, already partly digested and capable of being quickly changed into good, rich blood and strong tissue.

A most valuable feature of Grape-Nuts is the natural mineral elements (phosphate of potash, etc.) grown in the grains from which it is made. These elements are absolutely necessary for the well-balanced rebuilding of body, brain and nerves.

A few days' use of Grape-Nuts will show one a way to physical and mental strength well worth the trial.

Look in pkgs. for the little book, "The Road to Wellville." "There's a Reason."

Tell About Ox Warble

Several Persons Who Rear Live Stock Write of the Life History of a Serious Pest

"THERE is no mystery about the ox warble to anyone who has ever driven oxen in the South." writes Mr. J. W. Cook of Cayuga County, New York. "The warble insect is hatched from the eggs of the large fly known as the gadfly. The female that causes all of the trouble is almost as large as a bumblebee and resembles the blowfly.

"The backs of the cattle are punctured late in the summer by the female gadfly," continues Mr. Cook, "and an egg is deposited when the puncture is made. The hole soon closes up apparently, but in March or April following, the grub comes out in the place the fly punctured when the egg was laid.

"When a gadfly gets after a bunch of cattle, their tails go up over their backs and they make a break for brush or bushes on the double-quick, if there is any such protection in the pasture.

"I well remember some experiences I had with oxen fifty or sixty years ago when living in Maryland. Even well-broken oxen would become almost wild when gadflies got after them. And no wonder they did, for their backs would be almost as full of holes as if a charge of birdshot had been fired at them.

Larva Grows in Boy's Hand

"I never knew of but one case of a gadfly's stinging a person. I was working with a colored boy one day when the flies were bothering the oxen, and the boy was trying to catch the flies, standing with one hand on the back of an ox and grabbing with his other hand at the flies. All at once he yelled out that one of the flies had stung him. He said: 'Golly, boss, I don't blame ole Buck for making such a fuss! Dat fly hurted awlful.' I looked at his hand and found a hole about the size of a pinhead. In a few days it seemed well, but during the latter part of the winter a lump came on the boy's hand. He complained of its hurting him. I had forgotten all about the gadfly's stinging his hand. He asked me several times if 'that bile wasn't ready to open,' and so one day I opened it for him and got as plump an ox warble as I ever took out of an ox's back.

"I thought you might like to know of this, not from an entomologist, but from a farmer who has had more or less to do with cattle for more than sixty years, and a farmer who knows the fly which lays the egg and makes the hole where the grub comes out."

A short article, entitled "The Ox-Warble Puzzle," was printed in the May 22d issue of FARM AND FIRESIDE, in which Mr. L. M. Peairs, an entomologist at the West Virginia Experiment Station, said the ox-warble fly lays its eggs on the feet and legs of cattle, that the eggs are licked off, hatch inside the cattle, and when about half an inch long force their way through the tissues to the muscles just beneath the skin of the animals' backs.

"The missing link in this explanation," said Mr. Peairs in the article, "is the fact that, so far as I know, no one has yet found the bots actually in the tissues between the mouth of the animal and the skin of the back. I can readily see how this explanation may be doubted, and I shall be glad to learn of a better explanation backed by real observations of all the stages of the insect."

Eggs Aren't Laid on Feet

"I am positive the ox-warble does not come from eggs laid on the feet and legs of cattle," writes Mr. W. M. Clymer of Columbia County, Arkansas. "I have observed these insects for more than sixty years, ever since I was ten years old. My mother showed me and my sisters how the ox warble laid its eggs in the punctures made on the cattle's backs. The grubs work out through the skin when the warm weather comes, enter the ground, and there change to the mature fly that perpetuates the ox-warble race.

"By using turpentine and hog lard, equal parts, to smear along the cattle's backs once in August and two times in September, it will prevent the warble-fly from laying its eggs there. I will give one dollar for every warble found on a cow's back so treated.

"I can get the affidavit of a man to prove that in the fall of 1913 I called his attention to an animal's hide that was punctured in many places. I then put turpentine and lard on all but two punctures. None of the punctured places developed warble-flies except the two that I left untreated."

Clifford E. Davis, of Cumberland County, Maryland, has this to say about the ox-warble article:

"Mr. L. M. Peairs, after discussing the ox warble in FARM AND FIRESIDE, says he will be very glad to learn of a better explanation of the ox-warble insect than he has furnished.

"I have long given careful observation to this insect that produces the grubs on the backs of cattle. The egg is laid by the female ox-warble fly beneath the skin next to the back muscles.

Flies Puncture the Skin

"This fly is locally known here as the black horsefly, and when it punctures the cattle's back it adds insult to injury by not only laying its egg in the wound but it draws out blood where the puncture is made.

"Punctures are always found midway along the back where neither the brushing tail nor licking tongue can reach them. The grubs develop slowly, being an invention of the devil for a new crop of these pests.

"About April a round opening or breathing hole is formed over each lump where the larva is developing. At this stage a firm pressure with the fingers will squeeze out the grub. Otherwise it will mature, fall to the ground, and change to a mature fly.

"A drop or two of oil squirted into the opening with a small oil can will kill the grub.

"The eggs are never laid anywhere except along the animal's back. Never on the feet, legs, or about the head.

"The remedy to prevent eggs being laid is to spray the animal's back frequently with a fly-repellent and leave low bushes in the pasture to which the cattle may resort."

"I note in FARM AND FIRESIDE that Professor Peairs, entomologist, holds to the theory that ox-warble eggs are laid on the feet and legs of cattle," Mr. W. L. Martin, Ontario, Canada, writes, "are licked into the animal's mouth, there hatched, and when the larvæ are partially grown they migrate through the tissues and muscles to the animal's back just under the skin.

"He goes on to say the missing link, as far as he knows, has not been found—namely, the grubs actually en route from the mouth, throat, or stomach of the animal through the tissues to the back.

Hand Down the Theory

"Now, I admire science and I like the professor's frankness in admitting the existence of a 'missing link' in this theory, which we all agree is not his own but has been handed down. The theory has always seemed weak to me, and it isn't strengthened by Professor Peairs's missing-link confession.

"I don't know how long this missing-link theory has been absorbed and given out again by entomologists and veterinarians in the name of science, but we all recognize it as an old acquaintance for, lo, these many years.

"Professor Peairs of course learned it like his predecessors in the literature of his business.

"Were I a scientist I would refuse absolutely to swallow such so-called missing-link science preaching. Why shouldn't scientists investigate such mysteries instead of perpetuating these theories on their descendants?

"A stock-raising friend of mine furnishes some absolute proof that the eggs are deposited in the skin of the cattle's backs by rubbing salt and water three times—about the last of June, the first of July, and the middle of August. The cattle so treated will not have any warbles in their backs, whereas the ones not treated will be full of them."

Letters which told nearly the same experiences with the ox-warble fly were received from these persons: Miss Martha Mulcahy of Michigan; Mr. W. C. Siften of Michigan; Mr. M. H. Swarthout of New York; and Mr. E. C. Coburn of California.

We await further proof from those who hold the other view.

AN ILLINOIS man reports that he has kept hogs and horses on cement floors for many years, and likes them better than any others. But he always beds his stock down well.

THIRTY silos were put up in Ward County, North Dakota, in 1914; 19 in 1913; 12 in 1912, and prior to 1912 there were but 5 silos in the county. The county field agent began work in the county in 1912.

HOT WEATHER
the season a
DE LAVAL
SEPARATOR
saves most over any other separator or skimming system

IT'S A GREAT MISTAKE FOR any dairy farmer without a separator or using an inferior machine to put off the purchase of a De Laval Cream Separator in the summer months.

GREAT AS ARE THE ADVANtages of the De Laval over all other separators, as well as over any gravity setting system, at every season of the year, they are even greater during the midsummer season than at any other time.

THIS IS BECAUSE HOT weather conditions occasion greatest butter-fat losses with gravity setting and render it most difficult to maintain quality of product with any gravity system or unsanitary separator, while, moreover, the quantity of milk is usually greatest, and any loss in either quantity or quality of product means more.

THEN THERE IS THE GREAT saving in time and labor with the simple, easy running, easily cleaned, large capacity De Laval machines over all other methods or separators, which naturally counts for most at this time of the year.

HENCE THE GREAT MISTAKE of putting off the purchase of a De Laval Cream Separator in summer, whether you already have a poor machine or none at all, and every dairy farmer should keep in mind not only that a De Laval will pay for itself by next spring but may, if desired, be bought on such liberal terms as to actually save its own cost while being paid for.

EVERY CLAIM THUS MADE is subject to easy demonstration, and every De Laval local agent is glad of the opportunity to prove these claims to you, in your own dairy, without cost or obligation on your part.

IF YOU DON'T KNOW THE nearest De Laval agent please simply write the nearest main office as below.

The De Laval Separator Co., 165 Broadway, New York 29 E. Madison St., Chicago

50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

How will your silo be filled

You never will settle this important question beyond the possibility of loss till you own your own cutter. Get it this year—now. There's still time to get a

BLIZZARD
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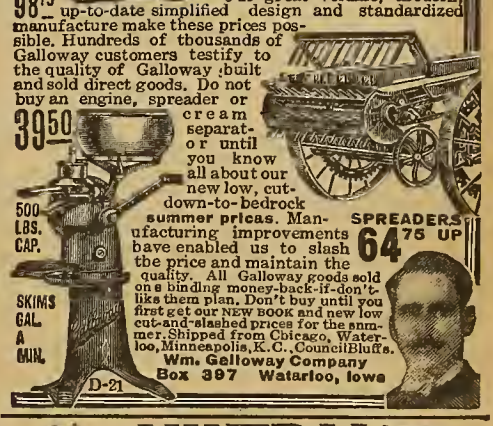

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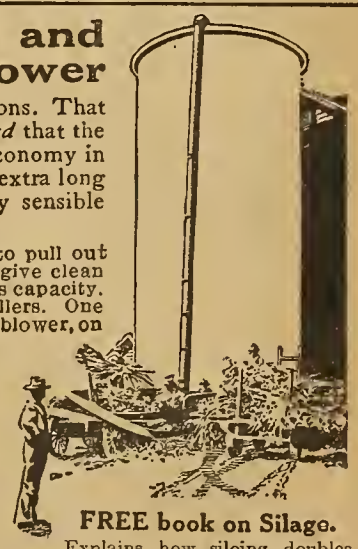

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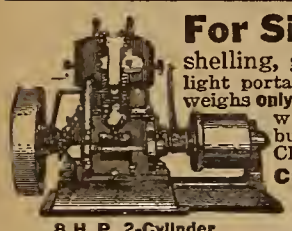

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Crops and Soils

Feterita as Human Food

By L. L. Klinefelter

THE discovery that feterita seed is good human food is a direct result, here in New Mexico, of the war in Europe, with its effect on the price of wheat.

The discovery was made in many places at about the same time. Around here people began experimenting with feterita early in the winter, and the longer they used it the better they liked it. In some families it has taken the place of nearly all the commercial cereal foods. You can't buy corn meal in some of the small towns because the merchants don't carry it.

At first, people ground the feterita in coffee mills and small hand grinders, but now larger mills, run by gasoline engines, are starting up.

The feterita flour is generally used with about a third wheat flour and, while it is slightly laxative, there has been no complaint from anyone thus far.

The present interest in the feterita and other non-sweet sorghums is purely spontaneous. There is no organized movement to push them. Around here we take to the feterita because it is better than milo as a fodder crop. Stock like it better, and as it is more drought-resisting and vermin-proof, and will grow in poorer soils, we naturally think a lot of it.

The yield around here is from 20 to 40 bushels per acre, threshed grain. It will grow in humid climates, but has been developed as a dry-farming crop.

Way to Kill Briers

By A. J. Legg

MANY old fields, especially in the East and South, have been allowed to grow up in brush and greenbriers. The old method of cleaning them up with a mattock as the principal tool is too laborious. They can be cleared more easily by using the ax, then fire, and finally allowing stock to keep the young sprouts down.

It is almost impossible to grub out greenbriers and wire briers so that they will not sprout. Sassafras and locust will also sprout everlastingly if they are grubbed out, especially if the ground is plowed. The more the roots are broken the more they will sprout.

The brush should be hacked down, except the locust, which should have the bark peeled off clear around. Let the brush lie on the ground until dry. Then burn it.

After this do not plow. But let cattle and sheep range over the clearing for two years. By this time the roots are dead and most of them rotted.

I have cleared land this way with less than half the labor of using a mattock, and did it much better. It is practically impossible to kill such things as sassafras, locust, and greenbrier by grubbing them.

Snare in Dry Farming

By D. M. Hatch

SUCCESS on the semi-arid lands of the West is not impossible, but it is a matter of hard work and special knowledge, not chance.

Long ago the best lands were taken.

Indeed, it has been several years since land of much value could be had for the government filing fee.

"Boomers" and "locaters" lie in wait for the home hungry, and when the locating fee is paid the victim finds the rosy statements that lured him were far from true.

Grain-farming is a delusion and a snare, but the stories of fabulous yields of grain are a drawing card played to the limit. The truth is that this is the rock on which countless unfortunates have sunk their hopes.

Rain does not follow the plow as many have fondly dreamed. In a series of years the rainfall varies little.

It would be better if "bumper" years never came, for then the land would be put to its only profitable use—that of cattle-raising.

The growing of forage-making crops and the pit silo has helped the man working along this line, and pointed the only way to prosperity. To expect success on any other line is folly—that is, where water cannot be had to irrigate.

Necessarily one must have considerable capital to start in. To equip and stock a new place, even on a small basis, requires several hundred dollars, and besides there must be a nest egg to fall back on till something can be sold, for to sacrifice the stock is to endanger success.

The outlook is not bright. The same capital and energy applied to a farm in the rain belt would on the average give double the results.

I say shun the locater; pay nothing to be put on a piece of land. If possible go there, and stay a while, a year if possible, before locating.

My Dwarf Kowliang

By C. Bolles

AT FIRST glance a person would say that the dwarf plants in the picture were milo, but instead they are of a comparatively rare variety of kowliang grown in but a few spots in this country, and in only one place in China (near Shangtung).

Just why those who persist in growing milo do not try this variety I cannot say; for me here in Nebraska it is slightly earlier than milo, and has ripened up where milo has not.

Three years ago I secured a start of this variety with an idea of replacing milo.

The two years that the milo and dwarf kowliang were grown together, the kowliang averaged 16 bushels an acre to milo's 10. The three years' trial has given the kowliang an average of 22 bushels, corn 13, and an earlier kowliang (No. 171) also 22 bushels an acre. Comparing dwarf kowliang and milo, we find that the kowliang never grows over four feet tall, never has over two suckers, always bears its head erect, and has brown seeds, while dwarf milo may reach six feet in height, has pendent heads, ten or more suckers, and either yellow or white seeds.

The dwarf plants gave the highest yield

This year the corn seen in the picture ran around 25 bushels, as did also the tall kowliang seen beside the dwarf kowliang, while the dwarf variety made 36 bushels.

"Miracle" Wheat

THE Kansas State Board of Agriculture protests against the use of the Board's name in connection with the sale of a variety of wheat called "Miracle." The Kansas Board disclaims any responsibility to those who buy this wheat for seed. They say they have never recommended it to anyone. Prof. L. A. Fitz of the Kansas Agricultural College made baking and milling tests of this wheat, and reported as follows: "The sample in question showed fair qualities for soft winter wheat. It milled very soft. . . . We could find no reason for recommending it over and above the average commercial lots of wheat purchased in southeastern Kansas."

Possibly the miracle does not lie so much in the qualities of this variety as in other phases of its exploitation.

Clover Comes Easy

By F. H. Demaree

BECAUSE of the fact that a good stand of clover year after year has been difficult on his place, H. E. Greer of Grundy County, Illinois, began sowing Mammoth clover rather than the common red clover. He knew that the Mammoth clover was the most hardy, and thought it would grow better as a result. That was seven years ago.

He has had continual success with this crop, and last year, after pasturing a 35-acre field until the 10th of June with beef cattle, he took them off, allowing the seed crop to come on. He cut and harvested an even 4 bushels of seed to the acre.

This seed sold for little better than $9 a bushel, bringing a cash return of between $36 and $40 an acre.

The crop in itself was more valuable from a cash standpoint than a 50-bushel crop of corn, and at the same time it gave two months of good pasture to the cattle. In addition it left organic matter and available nitrogen in the soil which will be turned into cash in coming crop seasons.

The value of a clover crop of this description, in so far as bringing to the soil an increased supply of available nitrogen, must be around $20 or $25 an acre.

THE Hays Experiment Farm, located in dry western Kansas, has never had a crop failure. It contains 4,000 acres, three fourths of which are cultivated.

THE big seed houses are getting the benefit of the county-agent movement. They are buying seed corn and other seeds from the county agents' demonstrators.

Things We Retail

By David Buffum

I HAVE just been reading your article about middlemen.

I'm glad that somebody at last has the originality and courage to write as if middlemen were not criminals and born enemies to the farmer.

Of course there's a difference. I have known commission houses to sting the farmer "something awful." But we ourselves find it expedient to sell a great deal of stuff to retail tradesmen. We have neither the time nor the inclination to bother with all the points of retailing.

Nevertheless, many farmers would find it a great advantage to sell certain products at retail. Take, for instance, our poultry.

We have now a little over 2,000 hens, so you will see that egg production is an important feature on our farm. We sell a large portion of our eggs direct to the families who use them—mainly wealthy people in Providence. For these eggs we get a somewhat higher price than is paid for the finest "fancy" eggs at the stores. This averages about 12 cents a dozen more than we could get if we sold to the storekeeper.

A year ago, at the "high price" season (November, December, and January), we averaged 75 cents a dozen; this year about 60 cents. And in the summer, when eggs often drop to 25 cents a dozen, we never sell them for less than 40 cents. Keeping the number of hens that we do, you will see what a difference this makes in our annual receipts. For the past eight years our poultry has never paid a less net profit than $1.20 a head per annum—usually more. Last year they paid us a net profit of $1.28.

The picture below shows one of the cartons in which our eggs are put up for the retail trade.

We rarely sell any dressed chickens at retail, preferring to sell them in large lots to the retailer.

One needs to know what things to sell at retail, and what at wholesale. But there are doubtless many, differently constituted from us, who might find it advantageous to sell dressed fowls.

As Lincoln observed, "For people who like that sort of thing it's just the sort of thing they like." We are of the people who do not like that sort of thing.

One more example: Hay at present is selling for $10 a ton to the dealer, who in turn sells it at $13 a ton. We sell ours direct to the consumer for $15 a ton, the extra $2 above the regular price being for better quality.

You will of course take note that neither hay nor eggs can undergo much change between farm and consumer.

For retail trade a carton like this was used

Garden and Orchard

Notions in Bean-Planting

By G. L. Turner

THE books and papers usually tell us that we should take great pains in planting Lima beans so as to have them eye-down in the ground. I have usually been somewhat of a skeptic. But in order to test this I planted two long rows of Fordhook bush Limas, placing every bean, about four to the hill, with eye down in the one row, and just throwing four beans down into each hill and covering them with the hoe (as I usually have been planting them) in the other row.

When the beans first came up the difference was very slightly in favor of the beans planted eye-down. But as this is written it would take a better observer than I am to see any difference in the two rows. Such questions are often settled very easily by a test or two in one's own garden.

Pansies for Profit

By O. M. Thomas

SOMEBODY asks me what money there is in pansies, meaning pansy plants for spring sales. The pansy, in this respect, is often very profitable. Neither greenhouse nor frames are required to produce them and get them ready for sale. Some weeks ago while making a trip to the boulevard running through our place, I passed a nice patch of pansy plants then in full bloom. This patch is located five miles from the nearest city.

Several autos were standing in the road. The occupants—men and women—were out in the patch making their purchases of pansy plants and cut flowers. Apparently the owner of the patch had been doing a good business selling such plants right along. Ground within sight of a highway is undoubtedly the most promising location for such a business, but that is not essential.

Of course you want a very rich and, if possible, clean spot in the garden to raise the seedlings in. You also want the best seed you can get, seed of a large-flowering strain of mixed rich colors. If you once have a fine strain, you can easily gather seed of your own, otherwise get it from a reliable pansy grower or trustworthy seedsman. An ounce will give you about 15,000 plants. The end of July is the proper time for sowing the seed. Have the seed bed ready, fine and mellow. Wet it down, and rake it over several times for two weeks before sowing in order to kill weed seeds. Then make shallow marks a foot apart, and sow the seed into them thinly, like celery or cabbage seeds. Run the garden rake lengthwise over each row, and roll with a light roller. It will be best to give light shading by cloth or with a muslin-covered frame until the young plants make their appearance. Then give good cultivation with the wheel hoe, and keep free from weeds.

During September and October transplant the young seedlings into the permanent quarters. Again select a rich spot having perfect drainage, and lay this off in beds four or five feet wide, with a two-foot path between each two beds. Carefully set the plants in these beds four inches apart each way. They will quickly take hold of the ground in their new position.

When the ground is frozen, apply a light mulch of marsh hay or other clean litter to be left on until spring, when it is removed and the plants given a chance to grow and bloom. They are then ready for sale. A dozen plants in a strawberry box usually sell at 25 cents. This gives 15 to 20 cents per square foot of bed.

Thinning Fruit Pays

THE man who puts on the market inferior fruit does an injury to both himself and the fruit business.

Fruit can be too large for the market, but it seldom is; and the apple is perhaps the only one which can be grown too large.

Thinning is the only recipe for large, plump, high-colored, juicy fruit. It pays.

Nobody wants undersized or misshapen fruit. A crate of little peaches never brings as much as a crate of big ones. So it pays to reduce the number of crates by thinning if the quality is thereby much improved. Often, however, there will be just as many crates as there would have been if no thinning had been done. Sometimes there will actually be more. The large fruits are more cheaply picked, packed, and handled.

Thinning saves the fertility of the orchard. Not very much fertility is taken away in the pulp, but the seeds draw heavily on it. In other words, the man who thins takes off more good fruit, gets more money, and removes less fertility from the orchard. He also saves his trees from exhaustion. It pays.

Tomatoes Without Rain

By B. A. Moore

IN THE spring of 1912 we decided to try staking and pruning our tomato vines according to a plan we saw in FARM AND FIRESIDE. This is in northeastern Kansas.

Before, we had luxuriant vines but not much fruit. I set the plants in the garden the end of May, leaving a space of four feet each way between them. I drove 5-foot stakes near the plants. When the plants were about 18 inches high I cut away all but the three best stalks, and tied the plants to the stakes with strips of cloth.

Every week I cut the new-forming branches and tied the main branches to the stakes. When the vines grew higher than the stakes, I cut them back. Of course I kept the ground free from weeds all the time. We had the largest and best crop we ever raised.

The following spring and summer we had a terrible drought but the tomatoes did well in spite of the hot winds and lack of rain. We had all the tomatoes we could use during all but the last two weeks of the season. Our neighbors who used the old method of culture had but very few tomatoes. And if we had not used the pruning and stake-tying plan we would have had no tomatoes either.

Currant-Worm Cure

THE humble currant is a staple fruit, and worth saving. The currant worm may be controlled very easily with arsenate-of-lead or Paris-green spray. As soon as you see the worms, or the holes in the leaves made by them, spray thoroughly. That skillful horticulturist, J. G. Moore of Wisconsin, states that the following solution will not injure either leaf or fruit if a little lump of lime is added to it: Pure Paris green, one ounce; water, ten gallons. Mix and stir thoroughly. Add three ounces of lime.

Short Cut to Fruit

DO YOU want to hurry your garden fruit trees into early bearing? Pear trees grafted on quince stock will fruit in three or four years. The same is true of apples on paradise stocks.

This short cut saves from three to five years, but the trees will be dwarfed in size and will be rather short-lived.

This hastening of the bearing period results from the slower growth on quince and paradise stocks.

ALL stone fruits should be thinned before the pits harden. This saves the energy of the tree and the fertility of the orchard.

IT PAYS to thin both apples and peaches. Fancy peaches cannot be produced if they are closer together than from six to eight inches. Take off the defective fruits of course, and enough of the perfect ones to bring them down to a proper load for the tree.

IT COSTS about 23 cents a mile to haul a ton on fair earth roads. Distances to market, according to the North Dakota Experiment Station, are as follows on the average: Iowa, 4½ miles; Minnesota, 5½ miles; North Dakota, 7 miles; South Dakota, 8 miles; Montana, 10½ miles.

TOBACCO decoction mixed with soapsuds will kill the melon aphis. Make up the tobacco juice by steeping tobacco stems in water until the color of strong coffee. The soapsuds are made with a pound and a half of soap dissolved in a gallon of water. Use enough tobacco juice to bring the quantity up to five gallons. Spray this on the melon or cucumber vines. In most places the tobacco decoction may be bought prepared.

DON'T forget the poison mash for cutworms. Bran, twenty parts to one of Paris green, a little orange or lemon juice and their chopped pulp to make it fragrant, and then water enough to make a damp mash. Lumps of this as big as walnuts placed about the plant will be eaten by the cutworms to their immediate undoing. Chickens have no business in the garden. If they get this habit it will undo them also, and any other domestic animal that partakes of it.

POTASH FOR WHEAT

Many farmers are anxiously inquiring whether they can secure any Potash in their wheat fertilizer this Fall. From the best information obtainable, it appears that while Potash exports from Germany were entirely stopped last January, there is still some Potash in the country that will be used in the wheat fertilizers. The amount is very much less than usual. Hence those, who wish to secure fertilizers containing it, must be alert and place their orders early. Those manufacturers who have it in stock will doubtless make it go as far as possible and the percentage in wheat fertilizers must be lower than in former years. The price per unit will doubtless be higher, but not so high as to make it unprofitable, especially where clover or hay is to follow the wheat.

Inability to secure the usual wheat fertilizers containing from 2 to 6 per cent of Potash should not lead farmers to decide not to use any fertilizer.

The reduction in the sales of cotton fertilizer has left more Potash available for wheat fertilizer than we could have hoped for a few months ago and minor sources of supply have been fully utilized.

There is no substitute for Potash.

It is very scarce just now but POTASH PAYS.

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Slaughtering Dixie

A Plain Story Wherein Trickery Plays Its Part

By H. B. FEATHERWORN

"WHAT time's Jake coming, Pa?" Mrs. Wilson was pouring the second round of coffee at breakfast.

"Eight o'clock."

Mrs. Wilson handed over Pa's cup with a resigned sigh.

Five-year-old Robina ceased licking syrup off her spoon, and fixed her mother with wide eyes. "Wi-will Dixie squeal w'en the blood runs out?" she ventured slowly.

George glanced up stolidly from his pancakes. "Keep still, kid!" he said.

Luella and Edith looked across at Ernest. Nobody smiled round the breakfast table. Something was the matter with the Wilsons this frosty morning.

"Well, I swan!" ejaculated Uncle Henry, looking round in sudden amazement. "There wasn't any such down-in-the-mouth family over a butchering when I lived to home. It meant bacon and hams and sausage and headcheese—"

Luella turned to the family guest, her mother's brother.

"Dixie is not like *your* pigs!" she condescended. "She's not made for 'bacon and hams and sausage and headcheese'." Luella quoted Uncle Henry with bitter precision. "She's a pet. She's a pet as much as Tige is, over there. And she knows her tricks as well—better!"

Luella's breath gave a little catch. She shot her upbraiding glance at her father. After all, it was Pa who was to blame.

Uncle Henry laid down his knife and fork, and burst into a loud laugh.

"Come, come, Elly," he bantered, "you're using up a mighty lot of good strong feeling over a dirty pig. If you'd stand up one half as strong for Ben Settle, now, or Jack Hiddings—"

Luella's face flamed.

"Dixie is not a dirty pig!" she contradicted. "You're like everybody else—give a pig the dirtiest there is, and then step back and say, 'Ugh, the nasty beast!'" Luella was the battling champion for Dixie, of all the silent Wilsons facing Pa and Uncle Henry.

Then Pa himself spoke, in the cold, determined voice of the family despot.

"I reckon most enough's been said about this butchering," he declared. "That hog's going to meet the end she's made for. If anybody feels squeamish about it they'd better go to the neighbors and spend the day."

Luella rose slowly from the table. The smoking griddle sent up an extra puff.

"Oh, certainly, Father," Luella answered quietly. "If we've got to where we have to fall back on our pets to live, let's kill Dixie by all means. There's Tige too; we might make sausage for the town trade of him." The dog, hearing his name, scrambled up from his place by the range, came to her, and affectionately nozzled her hand. "But who's going to eat her, I'd like to know!" Luella went on, breathlessly. "I never will! And if I was George I wouldn't stand it—I'd leave home first!" She vanished into the sitting-room; the door slammed behind her.

Mr. Wilson glared round wrathfully.

"Listen to that!" he exploded, glowering at his wife. "A pretty pass this family's come to when my own children up and throw such insinuations as that! Am I a murderer? Am I a thief to butcher a hog that's been fatted on my land, on my—"

"No, no, Thomas," Mrs. Wilson interrupted soothingly. "Elly's only high-strung; she don't mean anything. Maybe it's all for the best to butcher—the—the pig; but I do wish, Thomas, you would watch her perform once—just once—"

Mr. Wilson pushed back his chair with much noise, left the table, and strode out into the gray morning.

The rest of the family dispersed slowly. Ernest and George went out to the barn to renew, stolidly, yesterday's task of shelling corn. Some hours remained before Jake Demming might be expected.

Within the house a nervous flutter crept into the dishwashing, the sweeping, the bed-making. Mrs. Wilson placed a ham on the range to boil, and then came hurrying to remove it furtively.

"I—I guess we'll have canned fish for dinner after all," she explained.

Mrs. Holmes, who "dropped down" the road shortly after seven to borrow some cinnamon, discovered that an interesting matter was nearing a crisis, and she had no mind to miss anything by premature departure. She laid aside her shawl.

Out by the garden, Pa and Uncle Henry made a furnace of bricks and stones, and built a fire under the old soap kettle. At intervals snatched from the chamber work Luella looked out from an up-stairs window. By and by she slipped down to the front door, across the lawn, and so, unseen, to the barn.

"They're getting the water ready!" she cried, bursting in where her brothers were at work. "Oh, why won't you do something?"

George looked up.

"Do something!" he repeated sullenly. "What can we do? This barn is a tumbleweed compared to Pa when he's set. You know that."

"But Dixie! Dixie is yours!" Luella entreated. "Who found her when she was no bigger than a kitten?"

"What does he care? She's only a hog to him—a hog fatted on his land."

Luella leaned back with a half-sob, against the railing round the bay. "Oh," she exclaimed bitterly, "why couldn't our father be like other men!"

"Pa means well by all of us," said Ernest, without looking up.

"Oh, means well! But can't he ever say a kind thing, or laugh, or smile, or give us our way in anything? There's one thing we will have this morning! We'll have an exhibition! Come, everybody!" she called, whirling into the kitchen. "Mrs. Holmes, you tell Pa you want to see George's pig—*George's pig*—do her tricks. Never mind how mad he gets. It's the last—last—performance—unless, maybe—" Luella hurried out.

A loyal band formed promptly and followed, out through the rimy grass, on toward Pa and Uncle Henry and the domicile of Dixie. Robina, swinging her doll neglectfully by one leg, trudged at the rear, snuffling loudly. George and Ernest appeared at the same time, coming from the barn. Pa straightened up with arms akimbo as the two parties bore down on him.

Dixie was not like other pigs. She was not made for bacon and hams and sausage and headcheese

"Mr. Wilson," called Mrs. Holmes cheerfully, "Luelly's going to show me your son's trained pig I've heard so much about. Thought I'd come and see it perform before you butchered it."

"Come in pretty good season," Mr. Wilson responded grimly. "It won't be performing a good deal after it's butchered. Jake Demming's coming now to do it."

Jake Demming was indeed climbing over the fence from the road. Luella looked at him and swept on.

The little party halted at the corner of Dixie's yard. Luella rapped on the fence. Thereupon appeared a twitching pink snout, a pair of fat jowls, two shrewdly alert eyes, in the doorway of the low-gabled little sty.

"Pretty nice place for a pig," said Mrs. Holmes, looking about.

"Only decent—no better than the cattle have, or the chickens," Luella answered a bit tartly. "George and I built the pen. Come, Dixie."

Dixie came without urging. She scampered up with expectant grunts and squeals.

"Make room, everybody," Luella whispered, "so Pa can see. Now, Dixie, Dixie, do your best!" She leaned over the fence and tapped Dixie on the foreleg with a little stick; and Dixie, setting up a series of agonized squeals whose significance was belied only by the greedy watch kept on the apples and sugar in Luella's hand, held up the smitten foreleg and hobbled piteously up and down.

"Well, I never!" ejaculated Mrs. Holmes. "My good land! She won't eat swill, will she, Luelly?"

Luella broke one of the apples.

"Watch her catch," she said. She swung her hand as though to toss something into the pen. Dixie backed intently till the morsel came hurtling at her from a distance of half a dozen yards, when she caught it neatly and champed it down, stamping her hind hoofs exultantly and switching her curly tail. Three times she accepted the titbits thus offered. Then a trespassing rooster caught her eye and, jealously speaking loud in her belligerent "Woof! Woof!" she took after the intruder.

Jake and Uncle Henry came and leaned on the fence, but Pa stood apart. Out of the corner of her eye Luella saw, and her heart sank lower.

As the pig trotted up from the farthest corner of the yard, where the rooster had taken squawking flight, Luella held out a lump of sugar. "Come, Dixie; come, say your prayers! It's time for them, I guess," she whispered.

Dixie, unmindful of Pa and Jake and the steaming soap kettle, seemed loath to pray. Nevertheless, in obedience to Luella's repeated command and a tap on the head, she sank on the ground, tucked her fat face as well as she could between her outstretched forefeet and, save for the expectant blink of her white-fringed eye, presented herself a living statue of porcine humility and supplication.

"Ain't she the beatenest!" Jake roared. "I seen one like her in a circus oncet. I don't reckon I'll like to stick that hog."

Luella clenched her teeth.

"Up!" she commanded sharply to the pig.

Dixie rose on all fours. Luella held her last apple high.

"Up, up, Dixie!" she implored.

Dixie settled back on her hams. Twice essaying to stand and each time falling flatly sidewise with ridiculous grunts, at length she rose slowly, her forefeet flexed under her chin, her snout pointing skyward. Thus she stood, wobbling.

"Dix-ee! Dix-ee!" A small voice came calling softly.

Nobody had noticed a little figure in a checkered apron creeping along the outside of Dixie's yard to the opposite side of the pen. Nobody had seen a pair of stubby little boots mount the lowest fence board, and a pudgy form bend over where the topmost board sagged low. Not till now, when the raw mist cleft suddenly and the yellow beams of the sun seemed to focus straight down on her, did Robina distract the attention of every eye. She hung over the fence, her doll in one hand, in the other, held out to Dixie, a huge pippin, polished till it shone again.

Dixie heard; and Dixie saw. Down from her human posturing she dropped, and off to Robina she sped. But down, also, from the fence scrambled Robina, and away she flew. Dixie, with a fat and determined bound and an explosive grunt as she landed, cleared the low place in the fence and took after. Robina, with a backward glance, gave a squeal of glee and doubled her pace. Tige, barking madly, joined the runners. No voice or hand was lifted to stay them. The three vanished through the orchard into the hedge growth that followed the old stone fence down toward the wood.

The group at the corner of Dixie's yard looked at one another awkwardly. Mr. Wilson turned and poked the fire. Mrs. Holmes, with a sidelong glance at Luella, asked how long the race track was.

"I'd kind of like to see them come in on the home stretch," she said innocently.

But Robina, Dixie, and Tige did not return. The fire under the soap kettle had gone out, the hot water had grown chill, the moon was high, when men with lanterns, searching the deep timberland a good three miles from Dixie's pen, were stopped in a leaf-strewn dingle by the sound of soft gruntings and the champing of succulent mast. Simultaneously came the questioning growl of a dog.

"Here they are! Here they are!" went up the cry from every direction.

A figure came running from another part of the wood.

"Thank God!" answered the voice of Mr. Wilson.

Asleep and snuggled close to Tige was Robina, doll at her side; at a little distance, in the moonlight, Dixie, nosing luxuriously for acorns among the fallen leaves.

Robina stirred with a little gasp as her father took her in his arms.

"W'ere—w'ere is she?" she queried, starting.

Her father placed the doll in her hand.

"No!" said Robina vehemently, beginning to sob. "Dixie! Oh, now you've found us, and Dixie'll be killed!"

Her father held her tighter.

"I guess not," he answered in a strange, quiet voice. "I reckon we'll keep two or three pets we're attached to—if we can."

A hand reached up and gave his arm an affectionate and grateful squeeze. It was Luella's.

Out of the timberland, across the fields, the searched and the searchers took their way home. At the rear came Dixie, meandering through the moonlight at her own unhampered will, grunting a soliloquy of security and peace with all the world.

EW

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W

The Man With the Lantern

A Bobbie Story

By G. HENRY

I LOVE my mommie. You ask my daddie how much. She gives me my breakfast and my dinner and my supper, and so many pieces between times every day, or even in the night if I wake up hungry. But if I want a drink of water in the night when it is dark, my daddie most always gets it for me. So I love my daddie too. And both of them tell me nice stories.

Yesterday while my daddie was at work, some big black clouds swimmed over our house and my mommie said, "Oh, Bobbie, I am afraid it is going to rain hard!"

So we hurried—for I helped her—to bring in the porch chairs and some playthings I had on the grass, and then we just waited.

Pretty soon one of the big black clouds began to growl, and after a minute it just barked.

"Boom! Boom!" it said.

I got closer to mommie, for she is afraid of clouds, especially when they growl.

And then a man in the clouds lit a big lantern; and the light was so bright that it lit up the room where my mommie and I were, and I crawled on her knees.

Then "Boom! Boom!" again, and Mommie held me tighter. And the man must have been swinging his big lantern in a funny way, for the light just streaked the same as when Daddie lights his pipe and throws away the match—only the lantern light was bigger.

You can't imagine how afraid my mommie is of this man in the clouds who carries a lantern. She says once she saw him make his light so bright that when it shined on a barn the barn was burned up. So you can't blame her if she is frightened.

Well, the man waved his lantern until my mommie cried, and I got mad.

For when my daddie is away I am the man of the house, and somebody has to protect my mommie. So I just told her, "I'll fix that man with the big light."

Then I ran down cellar and pulled down the long ladder where it was hanging on some nails my daddie drove—and I hurt my finger doing it, but that was all right. And I began to drag the long ladder up-stairs, when Mommie heard me.

And she came to the cellar door and asked me what I was doing. So I told her.

"I am going up there," I said. "I have my fireman ax. I'll put on my fireman hat, and I'll stick my airgun in my belt, and we shall see if that man is going to make my mommie cry!"

And Mommie helped me, and we put the ladder out of the back door, and then Mommie said I would have to do the rest.

But I thought I would give the man with the lantern a fair chance, for I meant to hurt him if I had to go to the trouble of climbing up there, so I said loud enough so he could hear:

"Now, Mr. Man with the Lantern, you have got to stop making my mommie afraid. My daddie is away out in the field, so I am the man of the house. And if you don't stop this instant your growling and waving your lantern, trying to burn up our house, I am coming up there on this ladder with my ax and my pistol."

And in less than five minutes the sun was shining and the cloud had gone away to the north so far that Mommie and I could hardly see it. What do you think of that?

Ideas From Farm Cooks

Strawberry Ice—One pint of strawberries, mashed, and one pint of sugar. Let this stand, and add the juice of one lemon and one pint of ice water. Freeze without stirring. HELEN LYMAN.

Cherry Dessert — Whip one pint of cream with two tablespoonfuls of sugar until stiff, then beat in one cupful of cherry pulp, one-fourth cupful of pitted cherries, and three drops of almond extract. Turn into a chilled mold, lay a piece of oiled paper over the top, adjust the cover, pack in ice and salt, and let stand for three hours.

MRS. M. H. MCLEAN.

Peas in Pattie Cases—Make a rich pie paste and bake in pattie pans or large muffin rings. At meal time slip them into the oven until heated through, and fill each one with creamed peas, prepared as above, and serve hot.

A Delicious Rarebit—Work a small cream cheese with a little heavy cream until it is smooth and rich, and beat six eggs just enough to break up the yolks. Bring a cupful of milk to a boil, add a tablespoonful of butter, half a teaspoonful of salt, and a dash of pepper. Turn the eggs into the milk and cook them as you would scrambled eggs, and when done heat in the cheese. Serve on salted crackers. BERTHA B. STREETER.

Peas with Mint—Shell peas, and cook them until tender in just enough water to cover and with three sprigs of mint. After the peas have been drained moisten them with a little butter and cream to which half a teaspoonful of sugar has been added, and serve hot.

BERTHA B. STREETER.

Why Jellies Jell

JELLY is generally made from fruit juice, with equal proportions of juice and sugar. When jellies fail to jell, the cause can generally be traced to the use of too ripe fruit, states Mrs. G. W. Barnes, domestic science lecturer. Wash the fruit, cut it in slices, and leave the skins on. Cook in water (if necessary), but not too much water. Drain off the juice.

This juice must be cooked for fifteen or twenty minutes before adding the sugar. After the sugar is added, boil ten to fifteen minutes, then your jelly should jell. If cooked more than that time it will generally become tough and ropy.

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75 Wildwood Avenue Jackson, Michigan

Spring Holes Produce Cress

By GEORGE L. WALTERS

If some spots have too much water for average crops, why not try as a side line a crop that will grow in water?

I HAVE on my farm, not far from the house, a piece of springy ground less than an eighth acre in size. For years the only use made of it was as a spring from which we used to get water before we installed a more modern arrangement of piping the water into the house. We had a house over the spring and kept it dug out so that milk could be kept cool there.

Several years ago we started the growing of water cress on a small scale. The first year we sold less than $5 worth, but the business has grown until the annual harvest now amounts to something like $75. The crop requires practically no cultivation or attention until ready to harvest and market. This work takes very little time and there is a good market for the cress.

First a ditch about 2 feet deep and 2 feet wide was dug from the spring. It kept about half full of clear spring water all the time. To get the cress started, a few bunches were purchased on the market, although we had a hard time finding any. These were "planted" in the ditch. Planting was simply placing it on top of the water. In a few days roots had started and the cress was growing rapidly. Cuttings from this were used to start the crop in other parts of the ditch. Soon the ditch was practically full of it, and we had some to sell. One hotel bought all we could raise the first year. Then more ditches were dug a few feet apart in this wet place, and the cress was distributed in them.

Water cress is used extensively for garnishing meats and in salads. If you have a stall in the market it will go rapidly at 5 cents a bunch, and you will be pretty sure to have little competition. Grocery stores buy it readily, and hotels are more than anxious to get it. Few can get all they want and simply have to use something else in its place.

We cut the cress early in the morning and deliver it the same day. It should be cut rather than broken off, and we keep it cut down fairly close. Growth starts up again soon, so that many cuttings can be made in a season. When allowed to get too large it is likely to be tough. Customers like small, tender plants; then, too, frequent cutting will keep it from going to seed.

If you are unable to find water-cress cuttings you can start it with seed which may be purchased at any seed store. Plant the seed in moist beds, and when the plants get started transplant to the trenches. This process is simply placing the plants on top of the water. In two or three weeks a first cutting can be made, and so on until flowering. After it is once started it will continue to bear year after year. If it winter-kills you can easily start it again in the spring.

Water-cress beds should be free from contamination, or there will be danger of its harboring and spreading disease. Cress is consumed in an uncooked state and therefore should be grown only in clean, sanitary places from which you would be willing to drink.

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The Fob is of handsome black leather with a polished buckle, like illustration, with a rich gilt charm handsomely engraved.

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Thousands of delighted men and boys have secured their watches this way with the help of the Watch Man. You can do it, too. Any one that really wants a watch can easily do the little task that we require. Just send your name and address to the below address. To-day is the time to act.

Write a Postal To-Day to THE WATCH MAN

FARM AND FIRESIDE, Springfield, Ohio

Narcissus That Grew Into Money

By MARY E. BENHAM

This field yielded 617 cases of Narcissus last year

THE picture shows one-third acre of narcissus which in 1914 yielded 617 cases of flowers, nine dozen to the case, and netted us $45 clear of all shipping expense. By "we" I mean Mother and I.

Part of the bulbs were given us by a neighbor years ago, and the rest were on the farm when we bought it. This is in southern Illinois.

As the bulbs multiplied we reset them, planting them in rows 15 inches apart at 6-inch intervals in the rows. We work them only enough to remove the sod when it becomes heavy and threatens to choke out the flowers. We cultivate with hoes, as the flowers are too close together to permit horse tillage. In the winter they receive a heavy application of strawy manure. This insures larger flowers and longer stems by forcing the buds to grow up through the straw to the light.

The work comes early in the spring, about the middle of March, and is out of the way before the other spring work begins. We pick the flowers every day early in the morning and place them in water a while before being packed. We ship them in wooden crates, about 26x12x3 inches, lined with manila paper. In packing we begin at one end of the case and pack to the center, putting in a few green leaves for looks. Then we turn the case around and pack from the other end until the case is a solid mass of green and white. The flowers are then sprinkled and covered with damp paper. The cases are put in stacks of five, with lids on top cases only, as the under ones do not need them. Then we nail two stacks together with thin lath.

We ship the narcissus by freight direct to florists and to commission merchants.

W

FARM and FIRESIDE

The National Farm Paper - Every Other Week

ESTABLISHED 1877

Saturday, July 31, 1915 5 cents a copy

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PHOTO BY JOHN KABEL

LATE HARVEST

Ten-Second Topics of Interest

ONE of the surest ways to inoculate a field of growing alfalfa is with soil from a sweet-clover patch or an old alfalfa field. Use 400 pounds to the acre.

"ONE hundred hens," says a Canadian poultry expert, "will eat anywhere from a peck to a bushel of alfalfa or clover leaves a day." And it's good for them.

BUTTERMILK is an excellent poultry feed. It takes the place of bugs and insects and is better than beef scrap as an egg producer.

THE average hill of corn in the United States produces one eight-ounce ear. That means 26 bushels per acre. Two stalks in the hill, each producing a twelve-ounce ear, will yield 76 bushels per acre.

CONCENTRATED grape juice thicker than maple syrup is a new product obtained by a combination freezing and centrifugal process. It is a government invention—not Secretary Bryan's, however.

MORE Percheron stallions were imported during 1914 than any other breed. Belgians were second and Shires third. Counting all breeds, over 1,200 pure-bred stallions and mares were imported.

TWO per cent of all eggs sold are broken before they get to the consumer. Two per cent more are dirty. The total loss from all causes is over one sixth the total egg crop.

YOUNG celery plants should be grown in shade. Heat is bad for them, and they need plenty of moisture.

NOBODY now thinks of marketing the large and the small apples or peaches together, but not everyone has thought that it is quite as necessary to grade strawberries into firsts, seconds, and thirds.

KEEP dogs free from vermin. Give them clean quarters. Do not feed them raw meat, especially mutton. Have them treated frequently for tapeworm. The dog is a carrier for three kinds of sheep tapeworms, one infecting hogs, and several others.

DO YOU know that honey can be made to take the place of sugar in cookery? It is preferred for some things on account of its flavor. Farmers' Bulletin No. 653 of the U. S. D. A. tells all about it.

WHAT makes hay dusty? How can hay be kept free from dust? What's your experience, anyhow?

THE Washington Station has made into silage a lot of weedy alfalfa unfit for hay, and got good results with it as a feed. It recommends that good alfalfa hay and grain be fed with it.

NOBODY knows just how much better hogs will do when they have shade, but every good swine grower believes that they do better. Extreme heat is severe on swine.

ONE poultry raiser we know had a strange chicken come to his flock, bringing along a pair of scaly legs. Soon all his flock developed the disease. He soaked their legs in warm water, and then dipped them in kerosene after wiping and drying them. The scales came off.

STOCK arriving at Chicago is held several hours in the cars, suffering a heavy shrink, and many hogs die in the cars. Stock shippers are complaining bitterly at what they seem justified in calling an abuse.

The Editor's Letter

At Coolfont Farm, July 19, 1915

HERE'S a newspaper joke which in the clipping from which I obtained it bears the title, "The Beauties of Nature":

A party of young men and women members of a sketching club were motoring along a country road. Just within the fence on the left grew innumerable graceful stalks, each bearing globes of pale green that shaded into gray and purple.

"How enchanting!" exclaimed one young woman.

"Do tell us," said another young woman, equally enthusiastic, to a gardener standing near, "what those beau-oo-tiful things are!"

"Them? Them's onions gone to seed."

Well, what's the joke? I am not sure that I fully get the point myself. It might be the ability of the city girls to see beauty where the gardener couldn't; but that would be scarcely funny. It might be the inability of the young women to recognize the onion at sight, on the theory that a person who doesn't know onions can't possibly know beans; but I do not accept that theory of the witticism. Not to recognize onions is surely not so rare a thing as to seem humorous to a city audience. The laugh seems to be called for by the fact that the poor, ignorant creatures actually thought onions beautiful.

But aren't they beautiful? I regard them as more lovely than many a flower grown for its beauty only—those "onions gone to seed." The delicate balloon of vegetal spray held as by some enchantment as a crown for the emerald Ionic column of the stalk, the symmetry and uniformity of these beautiful heads standing in a row like a corridor in some natural order of architecture, the appearance of perfection which contributes so much to any fine work of art or nature—all these tend to produce in the bed of "onions gone to seed" an intimate and surpassing beauty.

If the gardener failed to see the beauty of the onions, the joke was on him; but I suspect it was on the newspaper man who created or reported the incident.

This is not an unimportant matter. Happiness is after all what every human being consciously or unconsciously seeks; and only the ascetic denies that happiness is a thing which we should seek. The happiest people are those who can see the beauties which these city girls noted instinctively as soon as the beautiful thing met their eyes—the common, every-day things seen every year or every day of a lifetime. Anyone can see beauty in a splendid building, a lofty mountain, a well-kept formal garden with its rare plants, a ship under full sail, a mighty cliff, a wide-spreading landscape seen from a hilltop, a cataract like Niagara, or a waterfall like Yosemite; but it takes the eye of a poet, a stranger, or a mind trained to see such things to note the beauties of onions gone to seed.

Enjoy Beauties of the Country

ONE of the rewards of country living is the enjoyment of these very beauties. Somehow—why is it?—we are prone to look upon the useful thing as unbeautiful. There are people still living—make the most of their companionship, for they will not be with us long!—who remember when tomatoes were supposed to be poisonous, were grown as ornamental plants, and called—dubbed so, I suspect by someone suffering from a jilting—"love apples." When they were thought noxious, they were beautiful—like an innocent act falsely condemned as a sin. As soon as they appeared in the soup they ceased to please the eye, though as beautiful as ever.

Down in New Mexico the Agricultural College Station is experimenting with sweet peas as a winter cover crop and a forage plant. Shall we cease to admire them and buy them at the florist's shops when they are used for ensilage and plowed down to fertilize the corn? I suppose so—and the pity of it is that so very many people who in that case will be sowing, tending, and harvesting sweet peas will lose the sense of their beauty, thereby losing also a certain portion of the happiness properly belonging to the business of tilling the soil.

The onion would be grown in the fashionable borders of the gardens of the rich if it were rare and useless. No flower could be prettier mingled with others of the proper sort. Why can't we enjoy the useful things and cultivate in ourselves the sense of their beauty? I have seen many of the most beautiful effects produced by gardeners in great estates and well-kept parks, but I will tell the successful farmer of a prettier sight than any of them can show, which he can see for nothing and to his own material gain.

Many of my readers have already thrilled to its beauty, but others will sneer at the suggestion that a field of green oats in full head is one of the loveliest sights in the world.

I don't know when it is most beautiful; but it is either just after sunrise, when each of the green awns carries its burden of dew, or in the golden afterglow. Look at the field toward the light. It is best, for every reason, to stand a few feet away from the edge of the field where the weeds and grass have been cut close so as to give the binder its first clean swath—and if one can take a position down-hill from the display and look upward, the sight is worth going a long distance to see. The golden-green straws stand like tapering pipes of colored grass, but you can almost see the living currents of sap coursing through them. The spreading panicles take a posture of perfect feathery grace. All is lighted up by the level rays of the sun or the western sky, save that the seeds themselves are darkly opaque and, hanging in an artless pattern across the selvage of the fabric, give effects like the pretty mottles on a thrush's breast.

Wheat Thrills the Poets

TENNYSON saw the beauty of the wheat, but why leave all the enjoyment to the poets? These lines are among the most thrilling in literature, because in a few words they bring all the great outdoors into the mind:

"The rain had fallen, the poet arose;
He pass'd by the town and out of the street;
A light wind blew from the gates of the sun,
And waves of shadow went over the wheat."

I like wheat and rye when the waves of shadow going over them, better than oats; but all are beautiful. Bryant somewhere speaks of the grain as an amber sea beating against the full-leaved woods, "its shores of green;" and a rippling lake is really no more beautiful than a grain field in that sort of light wind of which Tennyson speaks as coming from the gates of the sun—and we go long distances to see the lakes. Quite right too, but why not enjoy the waves of the wheat as we plow the corn in the next field?

Corn seems to me most beautiful just after the Fourth of July, and I always think of Iowa when considering it. At that time the tender plant has gone through all the troubles of its infancy: it has been ruined by cold, inclement weather in May; it has stood still and pined in thought with the green and yellow melancholy of June's wet weather, and now, rallying to the call of the sun, it stands like an innumerable host of soldiers, rustling in the strong prairie wind in some sort of drill requiring the whole army to stand slanting.

And flax—did you ever see and admire a field of flax in full bloom? Come with me, say to Jamestown or Bismarck, North Dakota, and I'll show you the sight of your life. We sometimes see flax growing in the flower garden, but one needs acres and acres of it for the full effect. It is exquisite as it stands in one of those rare calms of the prairies. But it is indescribably exquisite when a gentle breeze sweeps over it and turns all the little purple flowers toward you at once as if welcoming you to North Dakota.

These are but the outskirts of His power as shown in the beauties of our commonest crops, our weeds, our garden vegetables, our forest trees.

Herbert Quick

Always in Good Humor

QUIET

"Your wife dresses rather quietly," remarked the friend.

"She has to," replied the husband. "She usually has her mouth filled with hairpins."—Cincinnati Enquirer.

EMBARRASSING

FIRST STAGE HAND—What was the row out front during the first scene, Bill?

SECOND STAGE HAND—The understudy nursemaid got excited and carried in the heroine's baby when it wasn't due to appear until three years later in the fourth act.—Pennsylvania Punch Bowl.

NO, INDEED!

Mrs. Finnegan kept a boarding house and one day young Johnson came to her with several complaints. She listened in silence for a few minutes, but as the young man waxed eloquent she lost her patience.

"Don't I know every one of the tricks of your trade?" said Johnson with considerable heat. "Do you think I have lived in boarding houses fifteen years for nothing?"

"Well," replied Mrs. Finnegan, icily, "I shouldn't be at all surprised."—New York Times.

THOSE FOOL MEN

A girl would rather have beauty than brains, because only a few of the men are blind and the rest of them are fools.—Peoria Star.

IN COMMAND

The company marched so poorly and went through their drill so badly that the captain, who was of a somewhat excitable nature, shouted indignantly at the soldiers:

"You knock-kneed, big-footed idiots, you are not worthy of being drilled by a captain. What you want is a rhinoceros to drill you, you wretched lot of donkeys!"

Then, sheathing his sword indignantly, he added: "Now, lieutenant, you take charge of them!"—Tit-Bits.

MR. MANLEY—My dear, I've had my life insured for $5,000.

MRS. MANLEY—How very sensible of you! Now I shan't have to keep telling you to be careful every place you go.—San Francisco Star.

REAL PAYMENT

He was deeply in love with his wife, but awfully careless about money matters. He started away on a long business trip, leaving her short of money, and promising to send her a check—which he forgot to do. The rent came due and she telegraphed:

"Dead broke. Landlord insistent. Wire me money."

Her husband answered:

"Am short myself. Will send check in few days. A thousand kisses."

Exasperated, his wife replied:

"Never mind money. I gave landlord one of the kisses. He was satisfied."—New York Times.

MAYBE HE HAD BEEN DRINCOLN

There was an old fellow in Lincoln,
Whose eyes were eternally blincoln.
When asked what was wrong,
He replied: "Run along,
When I'm thincoln, I can't keep from wincoln."
—Cincinnati Enquirer.

A WARNING

"I wouldn't trust him," she argued. "Neither would I," assented the other girl; "he's as treacherous as a fountain pen."—Peoria Star.

MOVEMENT NOT MODERN

"Back to the land!" observed Jonah after his cetacean host had deposited him safe on the seashore.—Boston Transcript.

POSSIBLE EMPLOYER—H'm! So you want a job, eh? Do you ever tell lies?

APPLICANT—No, sir, but I kin learn.—New York Times.

FARM and FIRESIDE

—PUBLISHED BY—
THE CROWELL PUBLISHING COMPANY, SPRINGFIELD, OHIO
Branch Offices—381 FOURTH AVENUE, NEW YORK CITY; TRIBUNE BUILDING, CHICAGO
ENTERED AT THE POST-OFFICE AT SPRINGFIELD, OHIO, AS SECOND-CLASS MAIL MATTER
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Vol. XXXVIII. No. 22 SATURDAY, JULY 31, 1915 *Published Bi-Weekly*

Makes the Hill Acres Pay

How the Yields of an Abandoned Farm are Doubled

By A. F. GUSTAFSON

NINETEEN bushels of corn, seven bushels of wheat, and nearly a ton of clover hay more the acre were produced during a six-year period on hill lands near Vienna, Illinois, when soil erosion, due to sheet washing and gullying, was prevented, than in fields adjoining in which erosion continued.

A 16-acre field, which had been abandoned, was bought by the Illinois Experiment Station in 1906. The worst gullies were filled with soil. Teams and scrapers were used in placing the soil in the gullies. The surface of the field generally was put in good condition for cultivation.

The field was divided into four plots, A, B, C, and D. The plots A, B, and C were managed to prevent much washing—the slope was plowed and cultivated, and was kept covered with a growing crop as much as possible—while D was cultivated as many of the hill farms in that part of Illinois and other hilly lands are cultivated.

Thirty-one bushels of corn were raised the year during the six years on plots A, B, and C, while only twelve bushels of corn were produced on plot D. Twelve bushels of wheat were the yield the year on plots A, B, and C. Plot D produced five bushels of wheat the year. A ton of clover hay the acre was raised the year on plots A, B, and C. The yield of clover hay on plot D was only a few pounds the acre the season.

Use Limestone

TWO tons the acre of ground limestone were put on the field in 1906. A rotation of corn, cowpeas, wheat, and clover was used in the six-year period. Two tons more of limestone were added to the land while the seed bed for wheat was being prepared. After the pods had been picked for seed the cowpeas were plowed under to enrich the soil for the wheat crop which followed.

The clover in the rotation used was seeded in the wheat early in the spring. The first crop of clover was cut for hay. The second crop was plowed under the following spring for corn. If the clover failed to make a proper growth, soy beans were planted in its place.

The first step in the building up of washed and worn hill farms consists of preventing washing as much as possible, filling gullies, putting on limestone to sweeten the soil so as to grow larger crops of legumes, which by plowing under direct or as manure, together with all stubble, stalks, and weeds, increase the amount of nitrogen and organic matter in the soil.

Adding phosphorus is the next step in the building up of hilly farm lands.

If the soil is plowed deep across rather than down the slopes, contour seeding and level contour cultivation is practiced, and the soil is kept covered with a protecting crop, grass, or stubble, soil-washing will be reduced a great deal. This stops the fertility loss.

The application of limestone helps check sheet washing and sweetens the soil. This is necessary as rolling timber lands are generally sour, making it hard to get a stand of clover. An application of two to four tons the acre and two tons every four years afterward will keep the soil sweet. At the Rothamsted Experiment Station, England, they found the average annual loss of limestone to be 800 pounds the acre, while the Illinois Experiment Station found the loss at Edgewood on gray silt loam on tight clay, a gray prairie soil, to be 780 pounds a year. It is evident provision must be made for an annual loss of about 800 pounds of limestone the acre.

Ground limestone does not damage the organic matter. Air-slaked lime and quicklime destroy much organic matter in the soil. Thus nitrogen is lost.

Twenty-eight bushels of wheat an acre were raised on this poor hill land

Four plots were treated every four years, at the Pennsylvania Experiment Station, with two tons the acre of burnt lime, slaked with water before being spread. Four other plots received two tons the acre of ground limestone every two years. A four-year rotation of corn, oats, wheat, and mixed clover and timothy was practiced.

Caustic Lime Damages Land

SOIL analysis showed, after sixteen years, that the caustic lime had destroyed 4½ tons of organic matter, and had wasted 375 pounds of nitrogen the acre as compared with the ground limestone. Thus every ton of caustic lime destroyed organic matter equal to 4½ tons of farm manure. After the work had been in progress twenty years, the Pennsylvania Experiment Station reports that the land receiving limestone had produced, as an average for the twenty years, five bushels more corn the acre, almost six bushels more oats, nearly one bushel more wheat, and 550 pounds more hay than the corresponding plots receiving burnt lime. The use of ground limestone rather than burnt lime conserves organic matter and at the same time enables the soil to yield larger crops. Results similar to the foregoing have been obtained wherever such a comparison has been made.

"Ground limestone can be applied to the soil in any amount without any injury to the soil constituents," wrote Prof. George Roberts of the Kentucky Agricultural College and Experiment Station, in Bulletin 6 issued by the Kentucky Department of Agriculture, "while the burnt lime, because of its caustic properties, acts as a soil stimulant, destroying more or less of the humus or vegetable matter in the soil and causing a loss of the nitrogen of the soil. So, from whatever standpoint considered, the ground limestone is preferable. The correction of sourness in the soil is necessary for the most effective growth of the nitrogen-gathering plants."

Nearly every Southern and Eastern experiment station reports the soils of its State deficient in lime, and that ground limestone sweetens the soil. Burnt lime has a stimulating action, liberating plant food more rapidly at times than crops can use it, consequently the soil suffers serious loss, especially of organic matter and nitrogen.

As pointed out by Professor Roberts, limestone is necessary for the best growth of legumes and greatly increases their yield. Thus there is more organic material to return to the soil as manure or to plow under directly as green manure. After washing has been stopped, to increase the organic matter of these soils is the next step after putting on limestone in building them up, as they are very low in this most essential material.

The hill lands of southern Illinois contain from one to two per cent organic matter. The average is 1.66 per cent. There are ten to twenty tons of organic matter the acre in the surface of these hilly southern Illinois soils, to the depth of 6⅔ inches. There are only 1,250 pounds of nitrogen in the top soil, according to Circular 110 of the Illinois Experiment Station.

Need Nitrogen

FOR good yields, these soils must receive large amounts of active organic matter to supply nitrogen. Assuming that the stalks are all returned to the land, a 60-bushel crop of corn uses 60 pounds of nitrogen, which may be supplied through the decay of nearly 1,200 pounds of organic matter. Considering that 40 per cent of the nitrogen is lost, the other crops in the rotation will require about as much nitrogen or organic matter as does corn. With 1.66 per cent as an average for the timbered hill soils of southern Illinois, they contain 33,200 pounds of organic matter. If it were possible to remove by cropping all the organic matter from the soil, this quantity would be sufficient to produce a 60-bushel corn crop or its equivalent for twenty-eight years only. In order to increase or even maintain our yields, it is clear from these figures that the active organic matter must be increased in our hill soils in every possible way by plowing under manure, cornstalks, stubble, legumes, as green manures—in fact, any and every form of plant material.

The cowpeas plowed under for wheat on the 16-acre hill farm averaged from 1,000 pounds to 3,500 pounds of hay. Cowpea hay contains 40 pounds of nitrogen the ton. The pea crop represents an addition of 20 to 70 pounds of nitrogen the acre. This is enough nitrogen for a very small wheat crop to a yield of 25 bushels.

The second three-year average of the crops on the 16-acre hill farm is very much higher than the first, which is due largely to the accumulation of organic matter.

Two of the wheat plots were regularly seeded to red clover March, 1913, and the very poorest to sweet clover properly inoculated. It became very dry after wheat harvest, and the red clover failed completely,

The corn yield was twenty bushels an acre in this field because soil-washing was controlled

F.W

No precaution was taken against soil-washing. Four bushels of corn an acre was the yield

but the sweet clover was a very satisfactory catch and made a good crop the season of 1914, while soy beans took the place of red clover. Sweet clover succeeds when it is so dry that red clover fails.

The 1913 cowpea crop, which would have made not less than 2,500 pounds of hay, was turned under for wheat. This was an addition of 50 pounds of nitrogen to the soil, or enough to produce 21 bushels of wheat if we provide for a loss of 40 per cent of nitrogen, yet the best yield was but 14 bushels.

This fact suggests that a lack of phosphorus was responsible, in part at least, for the low yield, and that adding phosphorus would materially increase the yield of wheat and corn so long as large quantities of active organic matter are supplied.

Mr. A. P. Schroeder of Pulaski County, Illinois, has been working his land very carefully for more than twenty years, preventing washing, tilling all slopes, turning under residues, manure, cowpeas, and green manures, and recently putting on limestone and phosphorus. While some of this hill land is undulating, with rather gentle slopes, the majority is such that much washing would occur if it were permitted. This land is underdrained with strings of tile laid 80 feet apart or less, as the size of the hill requires. All of the 1914 wheat ground was treated with 440 pounds of acid phosphate the acre, containing 16 per cent of phosphoric acid, equivalent to 7 per cent of phosphorus, so enough phosphorus was applied to grow 120 bushels of wheat, allowing for a slight loss.

After this application phosphorus is not the element of plant food that holds down the yield as it appears to be on the Vienna field. The soil of the Illinois farm mentioned on analysis after twenty years of good treatment shows 2,000 pounds of nitrogen.

Cowpeas Pay as Green Manure

THE writer saw a two-ton crop of cowpeas being turned under for wheat on some of this land in the fall of 1913. The 1914 yield was reduced somewhat by the scanty rainfall, and not by a shortage of either phosphorus or nitrogen. The 172 acres of wheat on this Illinois hill land in 1914 gave an average yield of 29 bushels the acre. The corn on the same farm in 1913 gave an average yield of 46 bushels the acre. This is below the average for the preceding six years.

The results of the experiments conducted by the University of Illinois on forty fields show very satisfactory increases in yield from the use of finely ground rock phosphate when turned under with a green crop or farmyard manure. The decay of plant material furnishes acid which attacks the rock and makes the phosphorus available to the crop. With the large amount of green material turned under, rock phosphate should give as good results, especially if equal money values are applied. One pound of the element phosphorus in acid phosphate costs 12 cents, in rock phosphate 3 cents, in steamed bonemeal 10 cents, so four times as much phosphorus in the form of rock phosphate could have been put on for the same money—440 pounds acid phosphate, 7 per cent phosphorus, or 880 to 1,000 pounds of rock phosphate, 12 to 14 per cent—so that while enough phosphorus was applied in acid phosphate for 120 bushels of wheat, the same money would have bought enough phosphorus in rock phosphate for 480 bushels.

The phosphorus in steamed bone meal is almost as readily available as that in acid phosphate, and contains little or no acid. At the beginning of building up the productive power of these worn hill lands, before we can turn under large quantities of farmyard or green manure, it may be better to use bone meal or acid phosphate, as these give quicker though less permanent results.

Teaching a County to Cook

The Farm-Agent Plan is Applied Successfully to Rural Missouri Homes

By M. G. FRANKLIN

ONE progressive, hustling county in Missouri has employed a "county woman," the first one in the United States, just as the county adviser, "Sam" Jordan, whom it hired four years ago, was the first to be employed in any county without outside help. The duties of this county woman are many and varied. None bid fair to bring greater results than her efforts to rescue many farm women from the lack of opportunity they have had of learning to cook and to sew.

The Pettis County Home Makers' Club really deserves the credit: the men happened to have the sense to realize a good thing when they saw it and to foot the bill without a murmur. Of course, back of the Home Makers' Club is Sam Jordan, lean of body, wrinkled of face, making no claim to being a beauty, but shrewd to the point of canniness and gifted agriculturally to the point of being able to make the most obtuse learn. Jordan was hired to interest the men of Pettis County in better farming. When his first year was up, 700 of them gathered around a banquet board in the magnificent public park of Sedalia and testified, by their air of prosperity and their cheers of approval, to the practical value of Sam Jordan's teachings. But the most interesting thing that anniversary day was the presence of some 150 "better halves," who cooked and served the meal—and a better one was never eaten. As husband and wife drove home that night they talked over the day and the dinner, and decided that if 150 farm women could cook as well as that there was no reason why every wife should not do fully as well in her own home. That day saw the inception of the work which Miss Mildred Henton, the first county woman of the United States, is now launched upon.

Discuss Real Home Problems

THE Home Makers' Club was doing good work before they decided to hire Miss Henton. They met the last Friday of every month—three years of it, with but few absentees—for mutual aid and betterment. At each meeting these farm women, with sometimes as many as 150 in attendance, many of whom had driven from 10 to 15 miles over their newly built rock roads, discussed the many affairs of particular concern to the person who rocks the cradle and rules the destinies of the rural home. Papers were read on biscuit-making by women who had removed the dough from their hands but a few hours previous. The fine points about making good butter were discussed by women who had just brought to town with them some of the best country butter to be found on the market. The care of children was discussed in a rational manner by women who were really mothers and spoke from experience and information obtained at the cradle as well as out of books.

As the club meetings grew in size and interest, every member began to realize vaguely how large and all-important was the work of the farm woman, and how little had been done for the improvement of the farm home. Being themselves farm women in a community noted for its progressiveness, they set about to secure a specialist who could teach their children the things which they themselves had neither time nor training to give them. Incidentally they hoped—since the mother always comes second to the interests of the child—themselves in time to be benefited as much by this specialist as the farm specialist, Sam Jordan, had benefited many of their husbands. This is how it came about that Miss Mildred Henton appeared on the scene to teach home economics in Pettis County.

If you drive through the countryside of Pettis County to-day you will encounter farmers who are not only prosperous but whose digestion is sound and whose sleep is unbroken by indigestible food. The day of poor cooking has passed, never to return. But the start was not made in the farm kitchen, as might be thought: it was made in the country school. The members of the Home Makers' Club had wisely decided that once they got their girls interested in home economics and home subjects it would not be long before the older home makers would likewise take up the work.

There are 96 school districts in Pettis County; and of these, 34 immediately signified their desire for special home economics work in the schools. Furthermore, they backed up this desire by raising their part of the county woman's salary, and cheerfully furnished the meager equipment necessary for this work. As many of the girls in the country school will, in all probability, be in a home of their own in a few years, Miss Henton, under the direction of the Home Makers' Club, set about teaching them the fundamental principles of modern cooking. Securing a small oil stove or a flat-top heater, together with a few bowls, pans, and an oilcloth-covered table, they started in on the new work. The girls enjoyed the work very much.

The pupils of Pettis County schools are given lessons in cooking and plain sewing by Miss Mildred Henton

Visiting two schools a day, the county woman makes her rounds. On one day the girls of the country school have lessons in cooking; on another day the subject under discussion is plain sewing. The cooking lessons are in every sense practical and suitable to the ages and needs of the various members of the classes. If soup-making is on the program for the day, they take up the making of tomato soup in its various phases. Simple as is the subject of soup, for instance, not every farm woman or her daughter is able to make good soup, or at least make more than one kind of soup and be reasonably certain it will be good each time. Six out of twelve children in one class recently admitted that they had never tasted soup.

If tomato soup is made, they discuss, in addition to the method of preparing and cooking, the growing of tomatoes, and there the teacher of the country school works in some geography, explaining that tomatoes were first introduced into this country probably from Peru, through Mexico. Immediately the country of Peru comes to mean more than a small streak of red color on the map of South America, and at least two facts are fixed in the child's mind. Following the geographical discussion of the tomato, the class takes up the botanical name and characteristics of the tomato plant, discusses the chemical composition of tomatoes, and winds up by eating the soup when lunch time comes, which on a cold winter day goes well with lunches that may have frozen on the way to school.

On other days the girls are given sewing lessons; and, although nearly every farm woman can sew, it was found that many of these girls who would in a few years be running homes of their own did not know how to sew correctly a simple seam. Following a discussion and demonstration of patterns, of how to make or follow them, the class began simple seam work. Aprons were made by the various classes at first, until the girls, both old and young, learned how to run a seam properly.

Once having mastered the proper principles of sewing, the younger girls were allowed to make use of their ingenuity and imagination in the making of doll clothes, while the older girls, after a course in patching and darning, were given instruction in embroidery and work of more artistic but less practical value. Button-sewing contests are planned from time to time for these sewing classes, in which the honors will go to the girl in the district who can sew on the most buttons in the shortest time and in the neatest manner. Even the boys are allowed to take the work in button-sewing, and doubtless many of them will use this lesson in later years.

The start which has been made is an object lesson to others, and already the onlookers have begun to imitate. Rural America has paid all too little attention, it must be admitted, to its manner of living. Because he produces the foodstuffs of the world, the farmer has paid little attention as to how his little share of these foodstuffs was prepared and served in his own home. The old story of the farmer who, when asked what he did with all his fruit produce, answered, "We sell what we can, and what we can't sell we can," has been laughed at so often that until recently nobody ever stopped to investigate how the canning operation was carried on. But at last the farmer has been aroused to the realization that he is entitled to just as good and as digestible foodstuffs as the city man, and that there is a rectangular-shaped island of refuge—in the form of a kitchen, properly presided over—from which he may sight the promised land of perfect digestion.

Paying for Our Farm

By MRS. C. H. RUST

A FARM of 140 acres which had been robbed of fertility by being planted to cotton for many years was bought by our family nine years ago. The farm is paid for, the fertility has been built up to a high plane, and we have money enough ahead so we are holding our 1914 crop for higher prices. The farm is enclosed with a woven-wire fence, and we have labor-saving tools for both the fields and the house.

Live stock, dairying, legumes, crop rotation, hauling manure on the land, and practicing modern methods of farming brought us success.

When we bought the farm one 25-acre field refused longer to grow corn or cotton. It had been fenced off for a pasture. We hadn't a cent to pay down on the farm, and all the neighbors said we would never pay it out.

The outlook did seem a little unpromising, as there were seven children to care for and my husband was far from robust. When we moved here we owned two good mares and four cows.

My husband and eleven-year-old son cut off the bushes and briers that had grown up all over the pasture, burned the broom sedge, and flat-broke the land.

Bermuda is the only grass we can grow here for permanent pasture, so we planted Bermuda. In addition to the regular crops of cotton and corn, we planted peas and peanuts for stock feed and hay. Of course we did not raise much corn or cotton, but we sold milk and butter and two young beeves.

We tried to raise as much of our living at home as we could, and didn't spend much on fine clothes just to keep up with the procession.

As our stock increased we sold off the surplus—horses, cows, and beeves. We have never spent a penny for commercial fertilizer, but have brought our land up to a fine state of fertility by using the barnyard manure and planting legumes. We raise more corn and hay than any two of our neighbors, and find a good market for it by feeding it to the stock.

The pasture and our forage crops pulled us out of the rut.

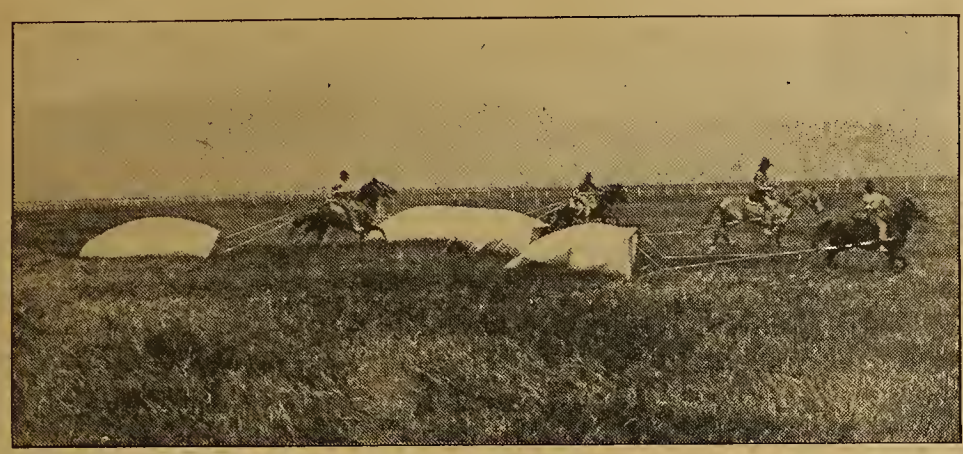
All the cotton we raised in 1914 is stored at home waiting for the European war to cease, and we are not at all concerned about where we are to get our 1915 rations.

This is no tale of brilliant success, but it proves that where the farmer and his family pull together, read the farm papers together, and set their faces toward the goal, they will be pretty apt to reach it if the goal is an easy independence and the finishing of seven youngsters at the nearest high school.

EW

Showing Farm Activities

Every Summer Brings Many Scenes, Both Familiar and Strange



Four hundred tons of grasshoppers were caught with this type of balloon hopper catcher in two Utah counties. A cent a pound bounty was paid

While balloons have been of great service in the past, they will not be used much in the future. Destroying the grasshopper eggs is cheaper and more effective

Tom and Jerry started one Ohio farmer on the road to success. The oxen are old now, and they do not work often

Many farmers would welcome a rabbit-catching hawk like this

The two 34-year-old elm trees on the right grew from the limb from the 80-year-old elm on the left

This Japanese long-tailed rooster is allowed off a high perch only an hour a day

These four draft animals, two horses and two mules, pull this type of light-draft binder along at a brisk walk. The wheat averages from 4½ to 5 feet high, and the stand is heavy

Baling hay from the windrow is a growing practice in the Southwest. This haying group baled 500 bales of alfalfa in six and one-half hours. Four gallons of gasoline were used

Here are two of the Holstein calves which have been born at the Panama-Pacific Exposition

Simplified Chores

Some Practical Ways to Spend Minutes and Save Hours

By D. S. BURCH

MULTIPLY a 5-minute job by 365 days in a year and you have 18¼ hours—more than a whole working day. Some ten and fifteen-minute jobs are fairly fixed quantities, but others can be hammered down.

A good milker can milk eight cows an hour. Some can do a little better, but "pailing" eight good dairy cows, giving about two gallons apiece, is a good steady hour's work. Those cows are milked in stanchions. They get their feed about milking time, consequently are close by when you want them.

That's one scene.

Here's another fully as common.

The cows when finally routed up out of the pasture come into a yard or corral. The milker takes his stool and sits down to milk the nearest "critter." She walks away. Milker follows. He sits down and milks a while. The cow moves again. Milker follows. In a story book the cow would kick the pail over at about this time, but in real life it is not so tragic. Instead, the milker keeps on, and after two or three more sittings just about finishes the cow. But she refuses to stand for stripping, so he lets her go. That's where the tragedy comes in; intermittent milking is slow and dries up the cows.

Four half-dry cows an hour is about the average speed for that kind of milking. To put into practice the idea of simplified chores, make a tie-up of some sort—a stanchion, tie post, ring in the side of the barn, or some such thing. Suppose you take as long as an hour to fix a tie for each cow. In four days you will make up that time by more efficient milking, and in a year you will save that hour exactly ninety-one times without working any harder. You can even buy adjustable stanchions at $2 each and save their cost in less than two months.

The twice-a-day chores need shortening first because a saving in them means twice as much time saved as in those done just once a day. Feeding hogs and calves are disagreeable chores on some farms. Any man who lets his hogs rush him when he is carrying their swill will appreciate the safety-first anti-splash hog trough in the picture below. With this trough, feeding becomes a real comfort. The swill is neither spilled on the ground nor splashed over the man feeding the hogs.

For calf-feeding, stanchions either in or out of doors are excellent where many calves are fed. If only a few, make wooden boxes which snugly hold the pail. You can stake these boxes down or nail them to something substantial. Put the pails in the boxes and let the calves drink. When you have taught a calf to drink out of a pail, it's a waste of time to keep on holding it for the calf. It doesn't appreciate your services. You wouldn't spend 60 hours continuously once a year holding a calf pail. Then why spend five minutes twice a day? That counts up to 60 hours and 50 minutes more.

Of course it wouldn't be the same lot of calves all the time because some would grow up. But others would be coming on and the principle holds good.

He Hung His Harness on Nails

BRINGING horses up from pasture in the morning takes considerable time if the pasture is large. One Missouri farmer having 20 horses, saved about three fourths of that time by keeping one horse up each night and riding out after the others in the morning. Half a dozen of the horses were fair riding horses, and those were used in rotation so that no horse was kept up more than once a week. It was just the work of a moment to put on the bridle. The use of a saddle was scorned as a time-consuming luxury.

The matter of watering stock—live stock of course—is worth considering, as a lot of time goes to waste while you are waiting for stock to drink. When horses are stabled, watering them is a tedious task. When you have a tank, a good way is to lead two horses to the water, tie them to the tank, and then go after two more; tie those and take back the first two that have finished, and so on. If you have to carry water to the horses, keep fully half a dozen buckets going.

So far we've ignored the question of improved equipment. Modern machinery is used more for field work than around the building because field work simply has to be done on time and machinery helps the man to get it done. But chores are more of a habit, and if it gets dark—that's what a lantern's for anyhow, to help in doing chores after an eight-o'clock supper. But certain field machinery is helping out with the chores, and the gas tractor is one of those machines.

"Mr. Wharrie," I said to an Illinois farmer last month, "how many horses does your tractor replace?"

"Ten," he answered.

"How long does it take you to put your tractor in shape for the night?"

"Oh, I just stop it and go off and leave it," he replied.

"Then how long does it take you to get started in the morning for plowing?"

"About half an hour, counting oiling, cleaning, and taking on gasoline," and then he voluntarily added: "I save over an hour a day in chores, and I use that time to good advantage. Besides, I keep the tractor going all the noon hour. My helper eats dinner early and runs the tractor while I eat."

Then he told of the relief from currying, harnessing, doctoring sore necks, and cleaning stables. He still kept horses, but he didn't need as many to do the same work on his 460-acre farm.

"How did you happen to get the tractor?" I asked him.

"We had 160 acres of slough grass to break," he explained, "and every spring we've had trouble with our teams, careful as we've been. Last year one horse died during plowing. This year it was a question of getting more horses, a tractor, or give up plowing that slough-grass meadow. We got the tractor because we wanted something better than horses."

Think of an hour-a-day saving in chores every day during plowing! That means more plowing and, later on, more crops.

But there are ways to shorten chores even if you use horses, and most of us are still using them. I once knew a man who took twice as long as his neighbors to hitch up a team. This was why: He hung the heavy work harness on nails. The harnesses would fall down and get tangled up. Or he'd get the fly net caught on one of the nail heads and tear the net when he took the harness down—constant trouble and fixing and repairs, all because he never took time to bore a couple of holes and put in some good harness pegs made from broomsticks cut in foot lengths. Have the pegs at equal height, three feet apart, and slanting upward just a little. Hang the collar and hames on the left-hand peg and the breeching over the other. Always hang the harness in the same way, and you can take it down and put it on in the dark, if necessary.

Milking machines, litter carriers, barrel carts, manure spreaders, and other chore-shortening machines are all good in their proper place where you have sufficient work for them to do. Any device that saves even five minutes a day, and is used every day, will usually pay for itself on a busy farm, but look out for apparent improvements that are seldom used.

Suppose, for example, you store your corn cultivators in the loft in the wagon shed and get them down just once a year. Of course it won't pay to spend a couple of hours figuring how to save an hour's work just once a year. But if you had to get them down once a week, then the sooner you rigged up some sort of derrick or elevator the better.

On water works just one incident. An Iowa renter bought a section of cheap land in northern Texas. It was not irrigated land. For a while he had no well and hauled water from a neighbor a mile away. That took about an hour and a half a day. But as soon as he could he had a well drilled—he had to go down over 200 feet. Then he bought a good windmill. There's lots of wind in Texas. Farm work was pressing, but every moment he could possibly spare he spent in digging trenches for laying pipe to the house, barn, and watering tanks. His resources were meager, but he bought good galvanized pipe and a large windmill storage tank. Once installed, his water works saved him time, labor, and worry. He was free to work all day in the field and when he came in at night and noon he didn't have to lug water that always has weighed, and always will, about eight pounds to the gallon, or over 20 pounds per average pailful.

That man didn't stop to figure the relative flow from an inch pipe as compared with a ⅞-inch. Perhaps he should have gone into the detailed study of hydraulics and plumbing, but he didn't. Instead he got pipe that his judgment told him was about the right size, and his judgment also told him to get it galvanized so it wouldn't rust, and to put it below the frost line so it wouldn't freeze. He was also particular to do a good job of fitting so he wouldn't have to tear up the pipe.

To sum it all up, he did a quick, good, practical job.

Do You Climb Over Your Gates?

"ONE of the poorest sorts of hired man on the farm," an experienced foreman told me, "is an ex-machinist or so-called mechanical expert. He won't do a thing until he has figured out the mathematically correct way, and it takes him an hour to decide how to repair a tool that a good farm hand can fix and have working inside of ten minutes."

This is mentioned simply as a warning against impractical exactness or paying high prices for services that are valuable in the trades but out of place on practical farms; also for the young men who might want to spend all to-morrow morning figuring and proving by mathematics that they have actually done 6 days 12 hours 9 minutes and 56 seconds' worth of farm work by sitting at the writing desk.

Going back to chores again, let's not slight time-saving gates and gate latches. The sketches show several good latches that are strong and easy to operate. I know of one farm that has latches so crude and hard to operate that the owner opens the gates only when he has to drive live stock through, or go through with a team. The rest of the time he climbs over most of the gates, and he's a heavy man.

Ten seconds lost time in going through a gate six times a day means a loss of over six hours a year, not counting wear and tear on gate, suspenders, and buttons. Take an hour to make a good latch and use the five hours saved reading your farm papers or enjoying the company of your family.

By now you have probably caught the idea of simplifying chores. There's a limit of course, but how many readers of this are down to the limit? Shortening chores is a fine test of ingenuity, and remember the beauty of chores is their repetition.

Certain field work, also, that has to be done regularly is in the same class as chores. Take manure-spreading, for instance.

Dr. W. E. Taylor, the noted soil expert, says the time taken to load and spread manure varies greatly with the methods used. Here is a test he made:

One man who hauled manure to a field in an ordinary farm wagon and spread it with a hand fork required 21 minutes to load his wagon, 28 minutes to spread the manure from the wagon, and 11½ minutes to go and come from the field.

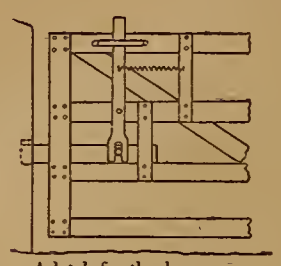
Another man having a low-down manure spreader loaded it in 16 minutes, spread the manure on the land in 2 minutes, and required the same time, 11½ minutes, to go and come. In both cases the load was a ton.

At the speeds mentioned, the first man would haul a little less than ten tons of manure in a working day of ten hours, while the second one with a spreader would haul over twenty. Or if you're more interested in the time saved, the second man could have finished his ten loads in the morning and gone fishing all afternoon and still be just as far ahead with his work at night as the other fellow who had no spreader.

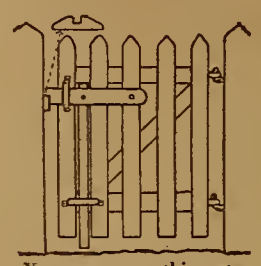
Yes, indeed, the arithmetic of farm work is fascinating—to write about, you say—but after all, isn't there something in it?

E W

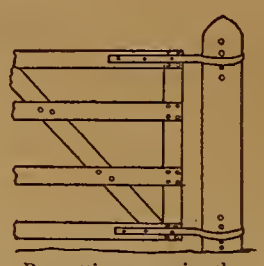
Gates That Will Save You Time



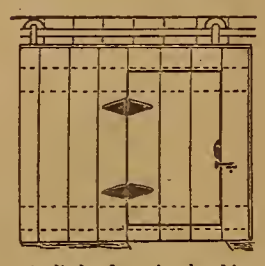
A latch for the horseman. The gate opens both ways, no need to dismount



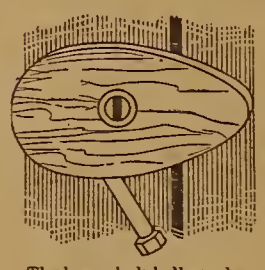
You can open this gate with your foot by raising upright stick with the toe



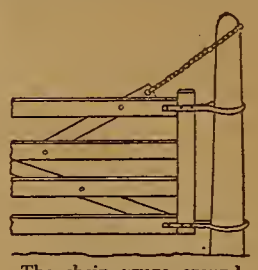
By putting pegs in the proper holes this gate is made adjustable to snow



A little door in the big one saves needless exertion. The women will like it



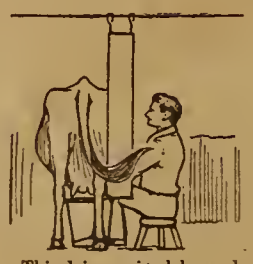
The heavy bolt ballasts the button so it's always horizontal and holds door shut



The chain wraps around the post and the weight of the gate then closes it

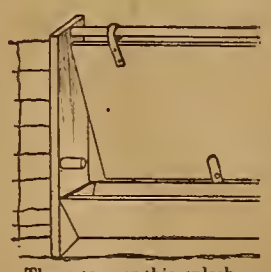
Excellent Stable and Feeding Devices

These trap-door gutter-boards let manure fall into spreader or carrier below

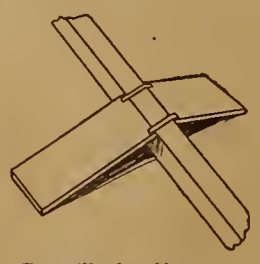


This dairy switchboard protects the milker from the restless cow's tail

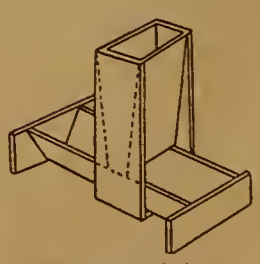
A crib that's easy to get corn from for feeding. It's really an immense hopper



The gate over this splash-proof hog trough swings forward and back



Door-sill wheelbarrow bridge made of two boards and two leather straps



Pour swill down the hopper and greedy hogs will waste less. Stake it down

What Others Do

Pigs That Were Thieves

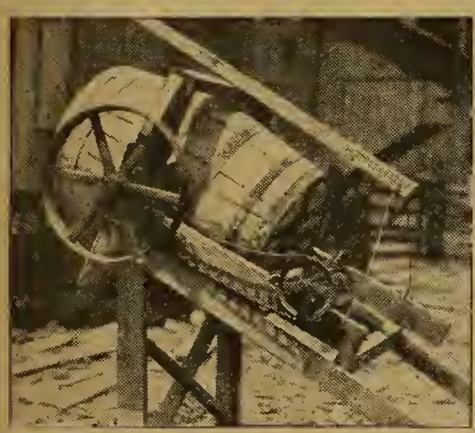
By Nina J. Lemmon

OUR cows had been falling off in their milk supply for several days, and we could not account for it until two little rascally pigs were caught in the act of milking them. When the cows were driven past their pen after that the pigs would stand upon their hind legs and squeal for them to stop. Some pictures were taken of the "milkers" without abashing them in the least, and after they had been photographed they had to be driven away from the cows with sticks.

Mixer for Five Dollars

IN SOUTHERN Ohio there's a community where nearly every farmer has one of these barrel concrete mixers. No two are just alike, but they are all copied from the one shown in the picture. It cost a little less than $5 for materials.

The barrel is mounted so as to revolve lengthwise. The big wheel on the side



is the main drive wheel, which when connected is belted to a gasoline engine. This wheel transfers its power by a chain drive to a sprocket wheel and thence to gearing attached to the center of the barrel head. The pole on top is used to dump the concrete when mixed.

The two corner braces right under the barrel conceal two wheels which run on a barrel hoop. These wheels bear nearly all the weight and reduce the friction to almost nothing.

Inside of the barrel, to hasten the mixing, are three cleats.

To get best results with a mixer of this kind first put in the water, then the cement, next the sand, and finally the gravel. Mr. H. D. Straley, on whose farm these pictures were taken, says the mixer does the work of three men.

Feterita for Hogs

AN IOWA seedsman says of feterita that it is thought by the Oklahoma people to be absolutely equal to corn as a hog feed.

It ought to be tried out as a forage crop to be hogged off.

Our correspondent says: "Feterita will absolutely make a good crop under conditions in which field corn will make a dismal failure. It will succeed on ground so thin and dry that you couldn't make a start with corn. Dry weather does not affect it in the least, except to hold it back, and thin ground only a little."

This optimistic account is worth considering.

Feterita will grow in the East as well as in the semi-arid regions. Eastern farmers should keep an eye on the Western "dry-farming" crops.

The grain sorghums have a good promise for chicken feed as well as for other stock.

Systematized Club Work

THE rural schools of Cook County, Illinois, are becoming known as among the best in the world. Superintendent E. J. Tobin has in this county, which we usually think of as all occupied by the immense city of Chicago, developed a system of schools in which instruction is related to rural life to an exceptional degree. The school field and garden clubs are centers of instruction in the things related to the country life in which these children find themselves—on the hem of the skirts of a great metropolis. Here are some of the rules under which these clubs are conducted:

Every child must rent his or her land.

The plot may be of any size up to 160 square rods (one acre), with 16 square rods as the standard.

Grow a crop that can be marketed.

An exact record must be kept.

The net proceeds must be put in bank, expended or loaned under the direction of the parents.

Every garden plot must be visited frequently during the summer by the country-life director and his assistants.

The adopted signboard, "Member Cook County School Field and Garden Club," must be placed on the garden plot of each member.

Observe how these requirements afford instruction in several common school branches and in business. The rules are simple, sensible, and capable of adaptation to almost any school.

Milk in Human Kindness

By Charles B. Corbin

WHEN I first went to farming, my horses and hogs had good buildings, but I thought my cows could rough it and still give plenty of milk. I turned them into the stalk fields to pick up what they could. That was the way the other farmers did.

One day I made up my mind that the cows would be my best money-makers if they had the right handling. I built a warm shed where they could stay nights and also be out of the storm in daytime. I bought a good separator, and those same shivering cows became sleek and began yielding triple what they had the year before. Then I built a silo, and put up a cow barn so they could eat in peace and warmth. The same cows yield me $2 a week a head, whereas 50 cents used to be a big average.

How to Kill Mustard

IN THE last issue of FARM AND FIRESIDE is an article on weeds, and things are said on the subject of wild-mustard eradication which are so erroneous that I must protest. I have had many years of experience in studying the eradication of wild mustard in grain fields by different methods, and out of my experience I wish to correct your correspondent.

The destruction of wild mustard in grain fields by the use of chemicals applied as a spray, or in the form of powder, is sure, inexpensive, and practical. The proof of this assertion are the hundreds of thousands of acres of small grain treated each year in all parts of the world.

To spray an acre of grain with sulphate of iron, for example, to eradicate wild mustard, costs about $1.65 per acre per year, and in some instances more, and this expense is warranted by the increased yield of grain the year of the spraying. By good work and the use of clean seed it is possible to clean perfectly a badly infested field in a few years' time, and raise good crops of grain every year of the cleaning.

Your correspondent speaks of tramping down the crop and infers injury. Does she not know that beginning in very early times in Thessaly, and continuing to the present time, fields of small grain have been and are purposely cut back? Has she never seen nor heard of the European practice of rolling grain fields? It is not necessary to go to Europe for this practice—I refer the correspondent to New England of fifty years ago, where the tramping down and rolling of grain was practiced.

Many persons think wild mustard can be eradicated easily by cultural methods, but this is not so.

On my own farm I have no mustard at this time, and have no fear of this pest. Chemicals have done the work for me.

I do not recommend as a farm practice the use of chemicals for the destruction of all kinds of weeds, but from many years' experience I do know that wild mustard is best handled by the use of chemicals—sulphate of iron, copper sulphate, and cyanamide. H. E. HORTON.

FARM and FIRESIDE
THE NATIONAL FARM PAPER
Published every other Saturday by
The Crowell Publishing Company
Springfield, Ohio

Subscription Price
One year (26 numbers), fifty cents. Three years, one dollar. Extra postage for Canada, twenty-five cents per year.

About Advertising
Farm and Fireside guarantees that its advertisers are responsible and honest people, and that its subscribers will receive fair and square treatment.
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HERBERT QUICK, - - - - - - - - Editor

July 31, 1915

Our City Customers

THERE are at this moment more than 3,500,000 persons of the wage-earning class in this country who are out of work, and nearly five millions who are on part-time employment, according to figures made up from data collected by the Metropolitan Life Insurance Company for the United States Bureau of Labor Statistics.

Or think of it in this way: Out of 40,000,000 people normally engaged in gainful occupations, more than eight millions, or about one quarter, are partly or wholly out of employment.

This takes away from agriculture eight millions of customers, in whole or in part. It lessens the buying power of the whole mass of wage-earners in the cities.

We who are already engaged in labor on land are not prone to view with much sympathy the "back-to-the-land" schemes so warmly pressed by well-meaning people; but are we altogether right in regarding the back-to-the-landers as competitors to be feared? Farmers deal with each other, as well as with people in the city.

If these three and a half millions of unemployed were able to find profitable self-employment on the land, they would be customers of ours and of each other, as well as competitors for the city trade. And a fully employed city population on higher wages would at once show enormously increased buying power. There is no way of being certain, but it is quite probable that if the unemployment in the cities was relieved from day to day and from year to year by the locating on farms of those who by temperament and training are best adapted to farm life, the greater output of farm produce would find more profitable market than now.

Agriculture cannot have permanent prosperity while the cities are full of workless people, and laborers working at wages fixed very largely by merciless competition.

The presence in a nation of idle hands and idle acres at the same time is a phenomenon which should engage the best thought of the world. It is wrong, that is certain.

The Best Animal

TO SEE the live stock in the very pink of condition is worth something to the man who loves his business. The prize-winning cattle in the great fat stock shows are a delight to the eye and make the mouth water.

Yet, to the real farmer the man who a few years ago took a second premium on a carlot of steers in one section with cattle right out of his feed lot, and which had cost him around 5 cents a pound as they stood, did a far better thing than the exhibitor who proudly pointed to the sweepstakes ribbon on a pen on which he lost money when they sold at the butcher's auction at 14 cents a pound.

An animal may be in too high condition for profit. It may be even too thrifty.

For instance, in a test in Nebraska two lots of pigs were fed. One lot was given tankage and corn; the other alfalfa hay and corn. The pigs given tankage made the most rapid gains; but the ones on alfalfa and corn produced the cheapest pork—and that is the real test for any of us.

Incidentally, it was found that the pigs fed on ground corn made the least and most expensive gains of all.

We ought to have prizes given, not for the best animal, but for the best when cost is considered.

Plan for a Horse Crop

WE HAVE been selling horses abroad to the number of 28,000 annually. Their average value has been $142.

Mules have been exported to the number of 5,000 a year, valued at $150 each.

Since the war broke out we have sold abroad 215,759 horses at an average price of $220, and 39,229 mules valued at over $190 the head. That is, we shipped away in ten months nearly as many horses and mules as in the past eight years.

The man who has a breeding mare may well study these figures.

There may be no present scarcity of horses and mules in this country, but if the war continues there will be. It will pay to raise colts. And for the man who has salable horses and wishes to equip himself with tractors or motor-driven carriages, the present time would seem to be favorable for making the shift.

—Harding in Brooklyn "Eagle"

"Walk softly, but—"

The Price of Wheat

ANSWERING several anxious subscribers, the editor will state that in his opinion September wheat at around a dollar a bushel—the present price—is too low, and that it will pay not to sell. But nobody knows.

If the Dardanelles were to be opened and Russian wheat released the price would no doubt fall; but the Allies do not seem to have openers—if the expression is allowable in the war game.

Moreover, if the editor knew about these things he might be tempted to make millions in the grain market instead of editing a farm paper.

A pretty good rule in marketing any farm product is to sell when ready. He who tries to outguess the market is attempting the impossible. He may do it, but if he does he will be lucky—simply and purely lucky.

Our Letter Box

Opposed to War

EDITOR FARM AND FIRESIDE: In the June 5th issue of your magazine I see the article, "A Great National Crisis," in which you say the people as one man are standing by the President. On the cover of the same issue you represent the editor as taking news and giving it out to us work horses. But we are thinking for ourselves a little, and we think you took down the wrong receiver; and we think the man at the other end of the line, if his mask were removed, would be seen to have horns and a sharp tail. Yes, we think you've got the wrong receiver. [The picture on the cover showed an up-to-date farmer telephoning his co-operative elevator to find out the price of wheat.—Editor.]

We are not murderers, nor do we want to be murdered. The people don't want war.

Why is killing a few Americans in a war zone by other nations worse than murdering women and children in Ludlow, Colorado, by Americans?

F. L. DONAHOO, Kansas.

Enjoys Tick Article

EDITOR FARM AND FIRESIDE: I read with a great deal of pleasure the article about cattle ticks that was printed in FARM AND FIRESIDE July 3d. Recently a dispatch from Washington, D. C., was published in an Iowa newspaper, which said that few persons knew the great losses suffered every year by American farmers from cattle tick, tuberculosis, and hog cholera.

The dispatch told about the losses running into millions of dollars every year: Hog cholera and tuberculosis prevail throughout the country, but the cattle-tick scourge is confined to one section—the South.

The newspaper article told all about the losses in the South from cattle tick, and that the scientists were fighting ticks and had freed 253,288 square miles of the pest.

And strangely just as I was wondering about how the tick propagated itself, what caused the fever, and how the tick was killed, along comes FARM AND FIRESIDE with the whole story, with pictures of the male and female ticks, a cow covered with ticks, and cattle being dipped in arsenical solution, which kills the ticks on them.

There is no doubt in my mind that when the South is freed of ticks it will furnish the feeders for us farmers in the corn belt to fatten. And the price of feeders will come down so there will be more margin of profit between the price of the feeder and the finished steer. It is no secret that the amount of live stock in the country has not kept pace with the growth of population.

I like FARM AND FIRESIDE because it prints so many pictures with the articles.

WOOD TEBBE, Iowa.

Says Life is Worth Living

EDITOR FARM AND FIRESIDE: Not all farm boys could make expert ball players, but the piece called "Farm Boys in Baseball" should be read over several times by all boys so as to impress on their minds the fact that not only to be a master ball player must they be hard-working, steady, strong, temperate, full of determination to get somewhere and save their money, but to make a success on the farm as well.

The older I get the more I enjoy hard work. I sleep better, eat better, and feel better. Have worked and ranched in the Southwest and Northwest, and returned to Massachusetts some seven years ago and bought a tract of land just logged off. I have built a cottage, a barn, dug a well, put in a cistern for rain water. To-day I have several acres all clean from stumps, have a hundred or more fruit trees, very thrifty; some fifty Bartlett pears, some in bearing three years; sweet cherries, peaches, McIntosh Red apples, rhubarb, strawberries, blackberries, thimbleberries, asparagus, currants, and plenty of Concord grapes. Mrs. Savage enjoys her flower garden of old-fashioned flowers, which the neighbors say is very beautiful.

When our day's work is done we can sit on our piazza and look out over all our land and see the improvements and the crops growing, also the passing teams and automobiles. F. S. SAVAGE, SR.

Custom Scarifying

EDITOR FARM AND FIRESIDE: The use of the new seed-scarifying machine recommended and recently described in FARM AND FIRESIDE for weakening the seed coats of hard-shelled seeds like alfalfa, sweet clover, and other clovers, and thus insuring good germination, is proving that half or more of the seed now being sown is wasted.

Ten pounds of alfalfa or clover seed after going through the seed scarifier gives as good a stand of these legumes as 20 or 25 pounds of untreated seed.

Why not introduce custom seed-scarifying machines in the co-operative creameries and neighborhood feed-grinding mills?

A neighborhood seeding 1,000 acres of clover and alfalfa can save several thousand dollars a year by scarifying the seed used. FRANK W. ORR, Ohio.

Would Reduce Doctors' Fees

FARM AND FIRESIDE: On June 5th you published a letter written by a Florida man, in regard to doctors' charges. I am glad this matter has been started with a paper of national reputation, and I wish to say that here in Alabama the doctors are charging from seven to ten dollars for a trip of seven to ten miles. And after coming and examining you, instead of leaving some medicine to cure you, a prescription is written. A trip to town must then be made, which means a delay of four to six hours to get the medicine and paying the druggist seventy-five cents to one dollar more.

The doctor will not come unless he gets cash, or his pay is guaranteed by some rich man or the county. Perhaps on the same trip he calls on Mr. A, Mr. B, Mr. N, and Mr. T, charging all the same fee. He is away from his office probably not more than three hours if he has a car, or five hours if driving a horse. A fine thing—from seven to thirty dollars for his trip and opinion, without giving any medicine!

Now I, for one, am disgusted with federal lawmakers who will allow such things, and I think the people should demand of Congress that a law be passed to govern the mileage and oblige the doctors to carry an ordinary supply of medicines for common diseases. It is what I term a druggists' and doctors' syndicate. EDWIN LAPORTE, Alabama.

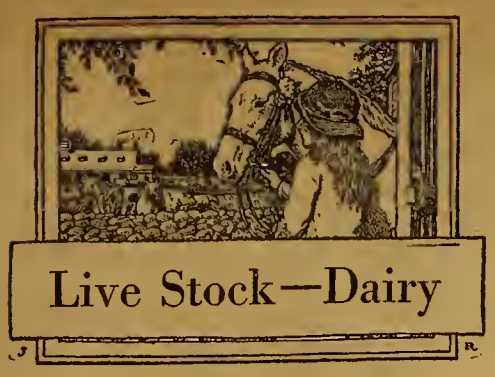
Not a Single "Knocker"

FARM AND FIRESIDE: We have a Holstein-Friesian Breeders' Association here in Manitowoc County, Wisconsin, that is only three years old and nearly the strongest in the State. Up to date we have 98 members without a single "knocker." This section is fast becoming a Holstein center because every member and buyer is treated the honest way.

The association has two meetings a year—a winter meeting and a summer picnic. We have just held our picnic and had 600 in attendance. There were over 65 automobiles on the ground.

CHAS. HAMPKE.

EW



Sold His Corn Well

By George Smeltzer

SOME issues back I noticed a method of sheep-raising by which 341 per cent on the investment was made.

I never knew there was so much money in sheep, or I would have gone into the business. This reader shouldn't have told people that 341 per cent could be made, because the farmers in this country are glad to get 7 per cent on their investment. Now they will all go into the business and spoil it for this particular person.

Two years ago last fall I bought an old sow for $15, and in June she raised me ten nice pigs, five of which were sows. I kept the five young sows and the mother, and sold the other five for $110 when eight months old.

The six sows raised me forty-two pigs, thirteen of which I sold for $93, and six died; leaving me twenty-three, which I think are worth $200.

Now, the sheep raiser's ledger would read like this:

1912—To 1 sow	$15.00	
1913—By 5 porkers		$100.00
1914—By 6 old sows		121.00
1915—By 13 pigs		93.00
1915—By 23 pigs on hand		200.00
		$514.00
Expenses		15.00
Profit		$499.00

But mine looks like this:

1912—To 1 sow	$15.00
To 10 bu. corn	3.50
To middlings, small potatoes, ground rye, oats	5.00
1913—To clover pasture, 2½ acres	10.00
To 200 bu. corn	70.00
To 7 acres rape and clover	25.00
To 700 bu. corn	245.00
To middlings, ground rye, cull beans, carrots, small potatoes	75.00
Total expense	$448.50
Total receipts	$514.00
Total expense	448.50
Profit	$65.50

Besides the above expenses are the following:

1 cooker	$12.00
Wire fencing	30.00
Stock dip	2.00
Stock tonic	2.50
Salt, sulphur, and salts	1.00
	$47.50

I would be glad to see this in print, to show the difference between a profit of 341 per cent and about one half of one per cent, and a good sale for your corn and other feeds. It is understood that this feed all comes from my farm at the milling company's prices. Labor is not included in this at all.

How Cow Profits Vary

PROFITS varied $109.55 a cow in a cost-of-milk production experiment conducted by the New York Experiment Station, according to Bulletin 357 published by Cornell University at Ithaca, New York.

Eight hundred and thirty-four cows in 53 herds were used in the experiment, which was conducted in Jefferson County, New York, for one year, by the New York Experiment Station in co-operation with the Jefferson County Farm Bureau.

Ninety-one dollars and fifty-eight cents a cow was the largest profit made. One of the herds lost its owner $17.97 a head.

Some of the dairymen sold their product for $204.54 a cow; others received as little as $70.99. The average was $100.63. The average profit was $20.39 a cow.

The cost of the cows' keep varied from $40.11 to $141.60 a head. The average cost was $80.24. Here are the expenses itemized: Feed varied from $32.61 to $68.01, averaged $51.57, and was 64 per cent of the net cost; interest on the investment and the cost of hauling ranged from $5.42 to $26.04, and averaged $11.25; fixed costs, which included the expense of the bull service, bedding, labor, dairy equipment, and buildings, varied from $18.36 to $78.12, and averaged $35.65.

The net cost of production did not include the value of the calf and the manure produced, which ranged from $16.50 to $25 and averaged $18.23. The profit was the difference between the receipts and the net cost of production.

The milk production of the cows varied from 4,161 pounds to 12,377 pounds a head. The average was 6,621 pounds. The butterfat produced ranged from 156 pounds to 423 pounds a cow. The average butterfat production was 241 pounds.

The cost of 100 pounds of milk ranged from 81 cents to $1.76, and averaged $1.21. A cow in one of the herds produced milk at a cost of 58 cents a hundred pounds, and butterfat at a cost of 15.2 cents a pound.

The average of the man and horse labor required to deliver 100 pounds of milk was 11.7 cents. Of this amount 4.8 cents was expended for man labor, and 6.9 cents was expended for horse labor.

Pasture, general use of coarse fodders about the farms, which could not be marketed otherwise, together with liberal amounts of farm-grown grains, reduced materially the cost of the feed used.

Sometimes Man's Fault

Some rather low-yielding cows made a better showing than others with much better production. Poor management and a poor feed supply offset the natural inclination of many of the cows to make a good record. There were good cows and poor cows in most of the 53 herds used in the experiment.

Some managers were more skillful in adjusting the costs than others, so that low-producing cows of good type and performance showed a profit; other dairymen with cows of good type and performance fed sparingly, but allowed other expenses to absorb the profits.

Seven of the 53 herds were kept at a loss of $1,335.71. This was caused by low milk production and a high fixed cost. Their failure to pay expenses was due in some cases to poor management.

Mare Foals 29 Colts

"QUEEN," a 34-year-old mare weighing 1,200 pounds, belonging to Stickney Brothers of St. Lawrence County, New York, has foaled and reared to maturity 29 colts worth $5,000. Twenty-six of the foals are alive. The last colt was foaled in May, 1914. The mare is thought to be in foal again.

The mare shows nearly as much vitality as she did twenty years ago. She is one half Morgan, and grade Lambert. She has been used as a driving and a work horse. A. L. HEATH.

Several Lost People

LACY C. HALL, six feet tall, age thirty-six, and weighing about 150 pounds, was last heard from in Springfield, Missouri, in 1912. He has light hair, blue eyes, and all the fingers are off his left hand, leaving only the thumb. His father, brother, and two sisters, who live in Tennessee, are anxious to learn of any news concerning him.

S. N. JOHNSON, six feet three inches tall, fair-complexioned, dark hair, weighing 200 pounds, and twenty-five years old, is a lost son to his father, J. P. Johnson of Georgia. He has been missing for a year, and his last known address was Cumberland, Maryland.

H. E. ELLIOT, usually called "Elmer," left Illinois about twenty-five years ago, and was last heard from in the mountains of Colorado in a mining district. Any information regarding him will be greatly appreciated by his brother, W. W. Elliot, who is now living in Michigan.

Address your replies to Editorial Department, FARM AND FIRESIDE, Springfield, O.

New Books

THE STANDARD CYCLOPEDIA OF HORTICULTURE, Vol. III, covering F to K, 500 pages and same number of illustrations, is now ready for distribution. This volume continues the same highly interesting and instructive information characterizing the entire work. The price of each of the six volumes it $6. The Macmillan Company. New York City.

CASTRATION OF DOMESTICATED ANIMALS, by Schoenleher and Dykstra, probably covers this subject more completely than any other book. 150 pages, 50 illustrations. Orange-Judd Company, New York City. Price, $1.25.

Goodyear Fortified Tires

Cost Users $5,000,000 Less

This year's price reduction—made February 1st—was due to lower cost of materials and our larger output. It will save Goodyear users, judged by current output, about five million dollars this year. And that, remember, was our third reduction in two years. The three total 45 per cent.

We cite these facts before we tell you of some added factory costs.

Goodyear Extras Cost Us $1,635,000

Goodyear Fortified Tires embody many extras. That's why we call them Fortified.

Five of those extras are costly features found in no other tire. The rest are quality extras which few makers employ.

If we omitted them all, we could save on this year's probable output $1,635,000. We could add that much to our profits. Yet Goodyear tires would appear to be just as good as now.

Users Would Pay

If we did that, Goodyear users would lose in tire wear many million dollars. For every extra we employ adds mileage and saves trouble.

There would be more rim-cuts, more blowouts, more loose treads. There would be less rubber, less fabric.

Yet five of those extras are used by Goodyear alone, and the rest are used by few.

This Year's Additions

This year's improvements—just our latest additions—will cost us $500,000 this year. All to give you extra wear. And we shall spend $100,000 on research this year to find more improvements for next year.

Think of these things—you who buy tires blindly. Tires are not alike. But these differences are hidden. So tires may look like Goodyears and not be half so good.

Remember this: Goodyears won their place on service. It is the highest place in Tiredom. It is super-service, proved by millions of tires, that makes them outsell any other. And that super-service is due to these extras. Get them. Any dealer will supply you.

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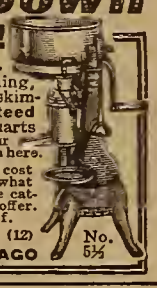

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Farm Notes

FLIES have been found breeding in winter in a heap of manure covered with paper and rubbish, though the temperature had been down to zero. Actually, it seems, the only good place for manure is in the field, winter or summer.

A MASSACHUSETTS grocer fixed up an arrangement by which his horse feed was dumped into the feed boxes by an alarm clock set to go off at the proper time. Any bright boy could design his own plan for such a system—if it seemed worth while, or was made worth his while.

THE man with a patch of rye and an empty silo may profitably put the former into the latter. A second crop of some sort may then be grown on the rye field, as the crop is cut for silage when in blossom. It will make succulent feed for the cows when August burns the pastures up.

ACCORDING to figures compiled by Mr. G. W. Bradshaw, there isn't a county in North Carolina which grows enough food for its own live stock and people. Alleghany County lacks only $19,000 of doing it, but the next best lacks $148,000, and from this the deficit runs up to $4,663,000 for Mecklenburg County. This is an enormous and entirely unnecessary deficit for the State.

THOSE intending to hog-off any part of their corn should not fail to sow rape ahead of the cultivators the last time through. Rape has the very food constituents in which corn is lacking—the protein. The rape will not only furnish feed for the swine which the land would not otherwise produce, but it makes every bushel of corn worth more to the hogs. It is richer in protein on a basis of the dried crop than alfalfa.

TO PREVENT sows from eating their pigs, many give a little laudanum to quiet the animal at the critical time. If the sow has the habit, the pigs should be removed from the pen, except at sucking times, until she gets over her excitement. She should not be allowed to eat the afterbirth. But if the sow has had a balanced ration she will not be likely to commit this crime. Oil meal in the feed a few days before farrowing is a good thing.

DON'T overlook powdered borax in fighting flies. A little of it sifted on stable floors, manure in the stall, and other fly haunts will keep their eggs from hatching. A half a pound of borax to eight bushels of manure has been found enough. If a pile is to be treated, the borax should be sifted on the edges, and the middle wet so as to drive the maggots to the treated parts. It doesn't seem to hurt the manure in the quantities mentioned.

How to Fight Mosquitoes

CHILLS and fever (malaria) come from mosquito bites.

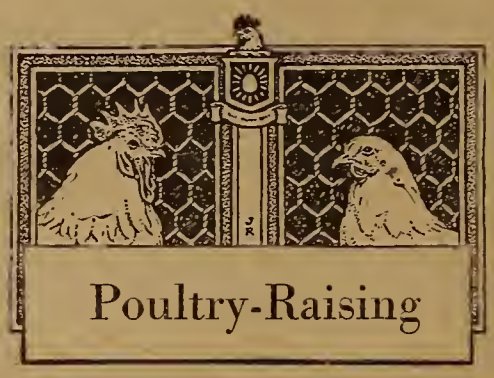
Yellow fever in tropical and subtropical climates is spread by mosquito bites.

Neither chills and fever nor yellow fever is ever spread in any other way.

Live stock are made less profitable by the annoyance of mosquitoes. Life on the farm is made a misery when the mosquitoes are biting.

The following suggestions for fighting mosquitoes are given in the Chicago "Tribune" by that great health officer and physician, Dr. W. A. Evans. We suggest that they be studied by schools, by communities, and by the individual farm family.

Find the breeding places.
Destroy all bottles, cans, and buckets capable of catching water. They serve as breeding places.
Fill up the cow tracks and ruts.
Drain the small pools and puddles.
Drain the marshes.
Clean out and straighten the ditches.
Clean and slope the ditch banks.
Tile ditches whenever possible.
Screen all tanks and water barrels with No. 18 screening.
Oil the breeding places once every ten days in very hot weather. Oil after every hard rain and after every very hard wind.
Cover the entire surface of the pond with a thin film of oil.
The oil mixture to be used is a combination of kerosene and crude oil.
When a spray pump is not available a sprinkling can may be used.
One ounce of oil properly used is enough to cover fifteen square feet of water with a thin film.
In cooler weather the oil mixture used can consist of three parts kerosene and two parts crude oil. In very hot weather the mixture should contain twelve parts crude oil to ten of kerosene.
Grassy marshes where an inch or more of water stands in the grass are especially in need of oiling.
Especial attention should be paid to small accumulations of water.
Mosquitoes rarely make their way across open ground for a distance of more than 100 yards. Therefore, if mosquitoes do not breed within 300 feet of a house they rarely cause great discomfort therein.
Female mosquitoes, the biters, live a month or two. They work their way through the woods and dense grass. They hide in heavy cover.
Clean the vines and bushes away for a space of 100 feet from the house. Vines on the wall are excellent hiding places for mosquitoes.
Screen porches with No. 18 gauze.

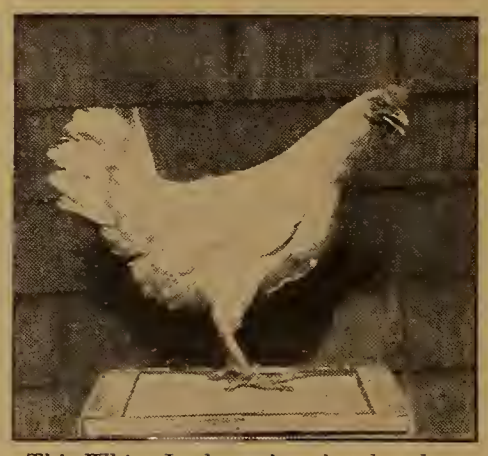


Poultry-Raising

Lay Eggs Four Years

A FIFTY PER CENT egg yield throughout the year—182 eggs—is good laying, but a fifty-six per cent lay for four years is high-gear production.

The White Leghorn, A-27, here pictured, bred by Prof. James Dryden of



This White Leghorn hen has layed an average of 204 eggs a year for four years

the Poultry Department, Oregon College of Agriculture, made the following excellent four-year record:

Pullet year	240 eggs
Second year	222
Third year	202
Fourth year	155

This hen is still in good condition and laying well in her fifth year.

Professor Dryden appears to be on the right track in his experimental breeding work. He has three pens competing in the Panama Exposition Contest at San Francisco—a pen of cross-bred Barred Rock-White Leghorn stock, one pen of pure-bred Barred Rocks, and one of pure-bred White Leghorns.

At this writing all three pens are very close to the star performers in this competition.

Professor Dryden is making use of Barred Rocks and White Leghorns in his breeding operations, as he believes these two breeds are most popular throughout the country.

One important question he desires to settle is the possibility of developing a race of hens that will continue to lay ten or twelve dozen eggs each year for three or four years.

If this can be done the poultry industry will be given a wonderful impetus.

This cross-bred Barred Rock-White Leghorn hen is a close relative of A-27

Garden—Orchard

Overkindness to Trees

WE HAVE all been told that the wounds made by the pruning of trees should be covered with some paint, tar, or other dressing to facilitate healing. But who knows whether it does any good or not?

Who has ever made tests which prove anything?

Answer: Mr. G. H. Howe of Geneva, New York, a member of the staff of the New York State Experiment Station.

He began four years ago a lot of experiments, using all the ordinary paints, tars, and gum preparations—and he has made up his mind that many of these things do absolute harm to the tree, and none of them do any perceptible good.

What do you think about that?

"Peach trees," he states, "seem always to be injured by these coverings." Here are some quotations from his conclusions:

"The dressings commonly applied to pruning wounds retard rather than accelerate the healing of the wounds."

"The popular notion that wounds need to be covered with some dressing to prevent the entrance of fungi, in sprayed orchards at least, is usually exaggerated."

"It is doubtful if it is necessary to attempt to prevent decay by applications of dressings of the kinds under discussion in wounds under four or five inches in diameter."

"It may be suspected that the injury caused by the dressings when applied to the wounds largely, if not wholly, offsets, or even overbalances, the protection offered, if there be such, against decay."

Well, this seems to squint toward proving two things: (1) That old Dame Nature often knows about what to do, and (2) that once in a blue moon a scientist discovers something that saves us work.

Melons for the Boy

By Geo. W. Brown

EVERY season we give our boys control of the melon crop. Rather, we encourage it by helping and giving our advice. We always have fresh, crisp, delicious home-grown melons too, because no one under the shining sun can beat a farm boy or farm girl growing melons.

And no one will get so much delight from a melon patch as a bunch of boys.

Our boys have plenty of chums, and we tell them to grow an abundance of fine melons upon which these fellows may feast.

Last year some of these boys ate melons upon our lawn until they could eat no more. They did not steal them either.

Did you ever hear of one boy stealing from another? No, sir. They have too much respect for each other. It is always some old fellow's melon patch in which the mischievous lads find their haven.

Let the boy have control of the melons and he will have the good will of every lad in the neighborhood. Fifteen cents' worth of seeds and two square rods of light sandy soil will grow all the melons that can be lugged to the house, and if you give him a chance he will find out how to plant, fertilize, fight bugs, and protect them until ripened and juicy.

DO SOME of your apple trees refuse to bear every other year? Try thinning them down to a scant crop the year they are too full. Good apple men say this will correct the resting habit.

Gardening and Salesmanship

By G. L. Turner

GROWING a good crop of vegetables is one thing. Selling it so as to get the best returns is another. What good is it to a man to be called an expert in celery-growing when he fails in making profitable sales of his product? Under the most favorable conditions the skillful gardener may be able to grow 8,000 dozen Golden Self-Blanching celery of standard quality on two acres of ground. More likely it will require three or four to grow that many.

But when he sells his crop to local shippers and they set the price, he will not get more than 10 cents a dozen stalks. The retailers in our city markets

of the East make consumers pay not less than 10 cents for a bunch of three stalks, and often 5 cents for one good single stalk. This means from 40 to 60 cents for the same quantity which brings 10 cents to the grower.

Get in touch with reliable commission merchants in the nearest large cities, and see what they will do for you. Retail customers may also be found in cities and villages within the first two or three parcel-post zones willing to take a regular supply of celery, also rhubarb, asparagus, eggs, and poultry, sent them by parcel post. Advertising in local papers is a good way to tell what you may accomplish in that direction.

THE gypsy moth has been discovered in Westchester County, New York. A tract of 250 acres of woodland is infected. The Department of Agriculture has begun a campaign against this pest of the orchard, which seems to be making its way westward year by year.

Beans as a Cash Crop

THE New Hampshire Department of Agronomy has sent out a leaflet calling attention to the possibility of adding field beans to the limited number of cash crops of that State. The reasons given are:

Beans work into the rotation as a cultivated crop.

They are legumes, and therefore do not exhaust the soil of its nitrogen.

They will always sell for cash.

They can be harvested, stored, and threshed out to be sold in winter when there is little profitable work to do on the farm.

While beans will sometimes make a crop on pretty poor land, they will do better on good land. Where an old field is foul with witch grass, the sod should be subdued and got rid of its weeds before planting it to beans.

On soils which are rather infertile, an application of barnyard manure will help make the crop. If commercial fertilizers are used, most or all the nitrogen may be left out.

In a general way, beans will do well on soils which are not quite rich enough for a good crop of corn. They thrive well on sandy loams, loams, and clay loams. The straw is a better roughage than most hays. It is better than corn stover, but not quite as good as clover hay. Those who throw away bean straw or burn it are overlooking a good source of gains for the live stock.

A WRITER in the "Thresherman" contends that unexplained thresher fires are usually caused by discharges of electricity between various parts of the machine. The sparks of electricity set fire to dust or chaff in the air.

THE U. S. D. A. points out a new use for the manure spreader in putting beets, mangels, or other root crops in cellars or pits. Take out the spreading cylinder and put in an end gate. Load roots on the apron, and unload by turning the machinery by hand.

Interesting Weights

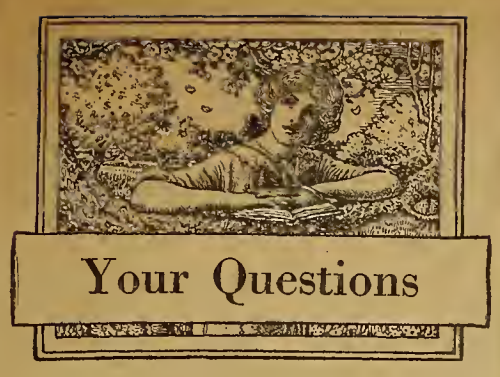
"HEAVY" soils like clay and muck are among the lightest in actual weight. They seem heavy because they are hard to plow.

Below are the average weights of different kinds of soils, also of various other substances:

Soils and Substances	*Wt. per Cu. Ft.*
Fine sandy soil	100 lb
Loam soil	80
Average prairie soil	75
Clay soil	70
Uncultivated prairie soil	65
Peaty soil	30
Gold	1.203
Lead	709
Limestone	165
Granite	165
Fresh water	62.5
Sea water	64.5
White oak wood	45
Cedar	35
Cork	15
Air	.075
Steam (not under pressure)	.037

The very light weight of steam is due largely to its high temperature.

W



Don't Ship Butter Now

Query: Our market to which we want to send our butter is 116 miles away. Would it be possible to ship it in cartons by parcel post? A. O. T., Vermont.

Answer: Don't try it. The distance is too great for the summer season.

How Much Hay?

Query: Will you kindly favor us with the correct method of measuring fodder in the mow.
W. W. CAMPBELL, British Columbia.

Answer: The general rule for hay in the stack or mow is to allow 400 cubic feet to the ton. That is, multiply together the length, breadth, and height of the hay in feet and divide by 400. The answer is the number of tons of hay. Getting at the number of cubic feet in a stack with sloping sides is a thing in which it is hard to be exact, but usually two practical men can agree on how to "square up." Some hays weigh heavier than others. Timothy weighs more than clover the cubic foot. Fine hay weighs more than coarse, and hay which has settled for a long time is much heavier than loose hay. The only thing which will give anything more than a rough estimate is the scales.

Beardless Wheats

Query: I don't like to work in bearded wheat, and I consider the straw or chaff unsafe for stock. Is there any variety of beardless wheat which is as sure a crop and sells as well as the bearded sorts?
E. B., Indiana.

Answer: There are several varieties of beardless wheat that are considered about as valuable as any of the bearded varieties. Among these are Toole, Fultz, Harvest King, and Early Red Clawson.

About Maple Sugar

Query: I should like information about making maple sugar. B. A., New Jersey.

Answer: Bulletin No. 252, Department of Agriculture, Washington, D. C., gives a full discussion of this subject. The beginner in making maple syrup and sugar should have this bulletin at hand and study it carefully.

Starting in Poultry

Query: Have read and studied your valuable paper FARM AND FIRESIDE for a number of years. We have learned to look to you for advice. I have saved a few hundred dollars of my salary and would like to start in the poultry business. I intend to locate within an easy drive from St. Louis, on two acres of land, with some pure-bred Plymouth Rock chickens, buy feed, and sell eggs and poultry at retail. I should also try to raise some ducks and geese, and later some squabs. I intend to have regular customers and drum up a trade the same as a milkman. If I use common sense and these ideas, do you think I can make a good living? A. K., Missouri.

Answer: We do not feel safe in advising anyone to undertake to live by the poultry business with the amount of capital mentioned. Even with more capital the venture would be too risky except with a skilled and experienced poultryman. A much better plan would be for this inquirer to hire out to a practical poultryman who is in need of a helper, and get at first hand the necessary experience.

To Begin With Bees

Query: I am anxious to get a start in bees. I don't understand them or how to handle them. Will some kind friend give me some ideas for a beginner?
MRS. FAGAN, Washington.

Answer: A beginner in beekeeping should make a careful study of the matter by reading and by talking with beekeepers. A visit to someone who has bees and is keeping them with good success is always time well spent. "The A B C and X Y Z of Bee Culture" is a book which can be obtained through FARM AND FIRESIDE, and is perhaps the best available on beekeeping. Some good book on the subject should be carefully studied. The price of the book mentioned is $1.50.

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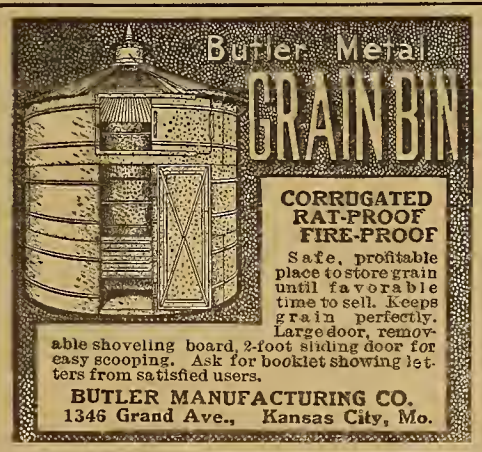

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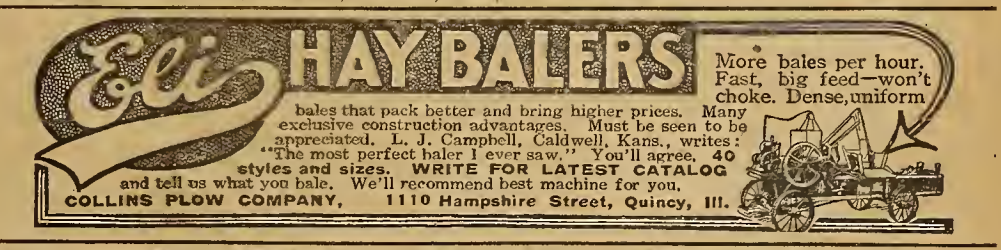

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No. 1999

No. 2682

No. 1999

No. 2829

No. 2826

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That Boy!

To Help Him We Must Like Him—Tricks and All

By JESSIE FIELD

"YES, I tell you that boy will be the death of us all yet before he's grown up," sighed the tired mother who lived on the farm next to ours.

She was talking to the pretty young girl teacher of our country school who had walked a mile through the rain to talk over with "that boy's" mother the fact that the boy had absolutely refused to show the proper interest in the subjunctive mode and the attribute complement.

Neither the teacher nor the mother thought of the little country girl with her bare brown feet and her boyish brown head on which the sunbonnet never would stay, whose big brown eyes were intent on their faces, and who didn't once let go her hold on teacher's hand for fear teacher would forget to walk on with her to her brick farm home on the next hill and stay all night. How could these grown-up people know all their words meant to the little girl, for "that boy" was her hero? Wasn't he the one who could drown out the gophers in the pasture the quickest? And couldn't he steer the long bob sled the straightest down the big hill? And didn't he fight the middle-sized boys if they teased the little girls?

"Land sakes! It just does seem as though boys are the hardest critters to understand when they get along thirteen of fourteen!" continued the mother. "If you can understand that boy of mine you'll be doing more than I can. Seems to me it would be a real satisfying thing if boys could just be shut up in a barrel when they are 'long about his age and fed through the bung-hole until they're twenty or twenty-one and old enough to have some sense."

The quick tears sprang into the brown eyes of the little girl, and she gripped so tightly the teacher's hand that she looked down and heard the sobbing voice say:

"But you will not shut him up, will you? For he is just the biggest boy in school, and we couldn't get along without him. He's good—too—and—smart—if—you—"

But she did not finish what she had to say about "that boy," for the teacher and the mother laughed, and then they walked on home. In the hollow on the way they found the first violets in bloom, and they saw robins and song sparrows and turtle doves. Just as they came to the locust tree at the corner where the path led into the brick farm house, "that boy" came whooping down the road with a big snake hanging from a pronged stick over his shoulder.

At the sight of the snake the teacher hurried into the house, but the little girl swallowed hard, and then looked interested while she heard how the snake was really dead but its tail wouldn't quit wiggling until the sun went down. Cheered by her interest, the boy whistled down the dusty road, and the part of the snake that still wiggled flapped against his legs at every step.

Weren't Good Men All Boys Once?

THE little girl fell asleep that night on the big couch in the sitting-room because she wanted to see teacher as long as she could. And as her father stooped to carry her in his strong arms up-stairs to her bed she slipped her little hand in his big one and drowsily murmured:

"He is a good boy, in his heart, and smart too, if they only understood. And, Daddy, weren't good men like you all boys like him once? Daddy, don't—let—them—shut—him—up—in a barrel—will—?"

The sleepy voice was silent again.

The little girl has grown into a woman now, and as she has worked in the world she has had the joy of working with many boys. She has never forgotten the words that the mother of "that boy" said, and she often thinks of them when she sees the same look come into people's faces, and she knows that these people in their hearts are saying that boys are such a bother that it would be a comfort to shut them up until they are men grown. In her woman heart she is just as sure as ever that they should not be shut up; that they are good and true and manly and worth understanding. She believes that we should give them a freedom and a sympathy that sees and openly recognizes the awakening manhood in their lives. Not by filling their lives with restrictions but by encouraging their activities and sharing in their interests and fun shall we help our boys to grow to the full stature of manhood.

If "men are only boys grown tall" and "hearts don't change much after all," then in every growing boy's heart there must be very much of manhood. And naturally in his "square" boy way he demands that the world recognize this.

Jacob was the bad boy in the town. His teacher had tried for a year to find a spark of good about him, and had failed. He did not learn enough to be promoted to the next grade, so she tried for another year, and at the end of it she was still in the dark as to just the right road to take to reach the goodness that she knew was hidden away somewhere in his boy heart. One morning during the summer she needed to have some bills for a church supper distributed. No one was in sight but Jacob, so she called him and said:

"Jacob, I am going to trust you to distribute these bills for me. I am sure you are man enough to see that everyone in town gets one. I know I can depend on your doing it thoroughly."

Jacob's black eyes were shining when he took the bills. In the afternoon late, a call came at the telephone. It was a call for the teacher. She was almost too busy to answer, but the person calling insisted that he must speak to her.

"Tell her it's the gentleman who is distributing her bills who wants to talk to her," the voice at the other end said.

And, sure enough, he was a gentleman after that instead of the bad boy, for the road to his heart and self-respect had been found.

If only we all could have the love and wisdom and sympathy to find the manhood in every boy, and appeal to it!

A large family of boys growing up in the same farm home did not amount to much. They all became worthless men without strength or character. Some people wondered why this was so when their parents were good people, and they had a good home. But the neighbors did not wonder, for they knew that these boys were always treated as children. Their manhood was never recognized. They drove the horses, plowed the land, husked the corn, took the wheat to the elevator, but their father never consulted them as to what they thought had best be planted in a field; as to the kind of live stock that would bring the greatest profit; and when they took the grain to town he always went for the scale tickets and settled for the money. The poor boys never grew to the full stature of manhood, though their bodies were big and tall, for they were not given a chance to discover that they could be men, bearing men's burdens and responsibilities.

A boy should have a nice room and the things he enjoys

There is so much manliness and so great a desire for an even greater manliness in every boy's heart that we must acknowledge and respect him. But we must remember, too, that he is a boy and will have a boy's craving to fish when the lure of warm spring days come, and a boy's interest in snakes, toads, and books of adventure; that he will feel the call of the worn trail to the old swimming hole, and will have a boy's passionate devotion to the real things of life—real people, real work, real achievement. There is sure to be something in his make-up that will not let him permit another boy to knock a chip off his shoulder without "licking" him if he can. He will be full of daring fearlessness and a great impatience. These are some of the high lights in the picture of "that boy," the boy whom many people who think they are good would like to shut up where he wouldn't bother their peace and quiet. But he is the kind of a boy who will be a strong man some day, to fight the battles of the world.

To be sure, these people say there is another kind of boy sometimes found, a boy who is always clean, and polite, and studious, who never fights back and— But why talk any more about such creatures?—for they are not apt to live very long, and if they do they will never set the world afire.

So because most boys are just ordinary boys, we must give them a chance to express themselves in a boy's way. I know one township where every Saturday afternoon during the baseball season the boys have the time off for playing ball. One woman who wanted to do some real good gave baseball suits to the township teams. These boys work very willingly; they do not go to town Saturday nights and come home rough and carousing; they attend their country church and Sunday school, and are the most manly boys in the neighborhood.

"And what do you expect to be in the years to come?" I once asked the captain of the team as he walked across the diamond. He was a young hired man. His bright boy face grew serious as he replied:

"I want to be a good farmer if I can. I went along with some of the other fellows to the short course at the State College of Agriculture last winter. I've been thinking a lot since then of the kind of a farm I am going to have. And you bet I'll let my boys off on Saturday afternoons to play ball, too."

Boys like a good time. They need it, and they ought to have it without having to do things that are wrong in order to get it. Then they should have a chance to know and see beautiful things. Everyone knows that girls should have pleasant rooms, but we seem to think that any kind of a place is good enough for a boy's room.

Boys need a nice place of their own for their books and stamp collections and snake skins and fishing tackle, just as much as anyone does. They love beautiful surroundings just as deeply as a girl does, though they may not say so much about it.

One day last autumn when the goldenrod and purple asters were blooming by the road and the sumac was turning red, I met a country boy in the road. He was a friend of mine, so I stopped my car to speak to him, and under the spell of the clear autumn sunshine I said:

"Mark, tell me, what is the most beautiful thing in the world?"

His eyes looked straight at me as he answered without hesitation: "Well, it seems to me, it is just along the road going to school."

A Way to Make the Corn Rows Shorter

WHEN we have filled a boy's life as full as we can of the right kind of work and play, and have helped him to see beautiful things and have respected his manhood, we need to think of the kind of education that we should give him. He has a right to the kind of an education that deals with things in the terms of life, and links right up with real things. His reading should contain many things of interest to a farm boy in his work, and should create in him a desire to read much more along these lines. His arithmetic should deal with the kind of problems he will meet on the farm, and not with commission, stocks and bonds, and longitude and time only.

Nor should it be a training of head alone, but of hand and heart too. In one county a fourth "H" was added on the county pin to those which stood for head, hand and heart. Some children thought this fourth "H" should stand for education that fits for the "Home;" some thought it should mean "Happiness" in all our work; some that it should stand for "Health."

But it was a country boy who thought out a very suitable meaning for the four "H's." His hair was tousled, and his freckled face flushed as he burst in with his straw hat in his hand saying:

"I know what the good-luck pin says. It says we must educate our heads and our hands and our hearts, but that's not enough: we must hustle too, if we want to succeed in life."

Whatever the education that the boy gets, it should put him in close touch with every-day life so that he will think as he works. A father expressed it well when he said: "I want my boy to learn about the soil and these other lessons of good farming, for it will make the rows shorter for him when he plows."

And a mother said after her boy had come in one Saturday eight miles in the snow for a lesson on corn judging:

"Walter is never cross now when he comes in tired from husking corn. He is too busy telling me about good ears of corn that he has found during the day."

But there's one strange thing about boys—you find a new problem in almost every boy you meet. No general theory will always work.

I am sure, however, there is one which will never work, and that is shutting a boy up! He would knock the staves right out of the barrel.

Boys are bound to grow and develop and do something. It is our work to see that it is something good. And to do this we must like them—snakes and all. I think boys are so nice myself, that when I have money enough saved I am going to buy a farm and adopt a lot of boys—all the farm will hold. I used to think I'd adopt seven, but now I am sure, if I can get a big enough farm to keep them all busy, I'll adopt seventy-seven—or more. Then I'll be mighty happy, for one of my ideas of heaven is that then we'll all have hearts that are as "square" and true and genuine as a boy's heart is.

E.W

The Blessing of the Hail

A Story of a Love that a Mortgage Made Stronger

By VELMA V. BEEBE

"I'M SORRY you feel so, Letty. I'd send you if I could see my way; but you kuow there's no ready mouey and won't be till harvest, aud I've beeu too blamed loug raising this mortgage to want to give auother, eveu if I could get anyone to take it, which I doubt."

The young wife looked unconvinced.

"You said you would, John Deaver, you said you would," she reiterated. "You promised me if ever a baby came I should go to Mother's aud have her take care of me. If you were auy kiud of a man you wouldn't let your baby be born in this dreadful, dreary place where there's uobody to take care of it or me, not if you had to starve to save it; but all you need do is to go to the bank and mortgage the crop and you can send me as well as not and have it all paid up in a month. If I could wait a month you'd see, Johu Deaver; but you know I cau't wait, aud you won't do anything for me."

She leaned upon the table aud began to sob with long-drawu, heart-breakiug sobs. Her husband laid his hand caressingly ou her hair, but she shook it off impatiently.

"Why, Letty, that isu't like you," he whispered, leauing over her. "You've always been so sweet to me."

There was no response. He walked to the open door and stood looking out over the shiuing fields of grain, still and level as a floor in the quiet air. His face alternately paled and flushed as his lips grew teuse or relaxed into a pathetic boyish expression, for he was very young.

The sobbing had ceased, but he did not know it. He was looking far away aud solving a deep ethical problem when Letty's voice brought him sharply back:

"What do you see, John?"

His face lighted with a smile as he turned it toward her.

"Something I wish you could see," he answered softly. "Come here, Letty."

She came slowly. Her husbaud eucircled her with his arm and turned her face to the West.

"Ain't it a sight, Letty? It ought to bring us iu a thousaud dollars auyway. I'll tell you what I see iu it that I wish you could see: I see the mortgage paid off aud the place all ours, yours aud mine aud the baby's, Letty; plenty to eat and to feed the team this wiuter, and to pay the doctor over at Boomtown aud old Mrs. Broway for taking care of you (they're both good, Letty); and a fine start uext spring, uo debt for seed nor plows as there was this year. We'd be right ou the high road up. Can't you see it, Letty? You've been such a help and comfort up to now, little girl; you areu't goiug back on me are you, houey?"

"'Tisn't going back on you; it's you goiug back on your promise. You know you promised me; you know you did, John Deaver. I might have known how it would be. Bob Argo said you'd—"

"That'll do, Letty," interrupted John sternly, aud strode away toward the barn.

"Hello, John!" shouted a ueighbor, passing on his way home from town. "Here's a letter for your wife. They said you hadn't beeu iu, so I asked for your mail."

"Thank you! I'll do the same for you next time," responded Johu, his eye brighteuing as he saw the postmark, which was a familiar one.

Hastening back to the house he called cheerily: "Letter from back home, Letty!"

But Letty had retired to the little bedroom and locked the door.

"Put it on the table," she commanded.

"Aren't you going to read it?"

"Not now."

"'Tisn't your mother's writing. Maybe something's happened. Better open it, Letty."

No response.

Johu was disappointed. He had no relatives to write to him, aud the gossipy, newsy letters from Letty's family were uearly as much to him as to his wife; but he had no mind to show his disappoiutment.

"Guess I'll drive over to Matthews' and see if I can get his reaper next week. Want to ride along?" he queried after a pause.

"No!"

He went out as abruptly as before. The bays nickered to him as he entered the straw shed which served as a stable, but he could uot respond in words. Something iu his throat prevented, besides he was deep in that ethical problem again.

There was no oue at home at the Matthews place and the reaper was not under the shed. Probably the Deans, whose crop was earlier, had already engaged it. He would drive on there, and if he failed of that one he would take the crossroad aud try at Dawsou's, coming back through town.

The problem was solved now. He had promised Letty and he must keep the promise. He owed her the trip East just as truly as he owed Garuett five hundred and interest. If it weren't so late he would get the money to-day, but to-morrow would do. He would tell her to-uight, and to-morrow she would pack her trunk and he would briug her into town early enough to arrange money matters before train time. He felt sick for a moment as he thought of the months of weary labor, all alone; but his mind was made up.

She was not at the door to greet him wheu he reached home. He left the team standing while he carried in the soap and coffee he remembered she had said were lacking.

Letty was not iu the room, though supper awaited him on the table. The bedroom door stood ajar, and on pushing it open he was surprised to see the trunk in the middle of the floor already packed, and Letty in bed, apparently asleep.

"Letty," he said softly.

There was no answer, so he tiptoed out, unhitched the horses and fed them, milked the cow, straiued aud set the milk, ate his supper and washed the few dishes, tryiug to leave the kitchen as neat as Letty always did.

He looked about to see if Letty had left the letter where he could read it. The envelope lay on the staud, but the letter was no longer enclosed. There was something disquieting about the handwriting of the address. He sat for a long time trying his best to remember who made that peculiar L: someoue "back East" in the old district school, of that he was quite certaiu, but he could not remember who it was.

Letty was standing just inside, white and rigid

Shiveriug slightly, he laid it dowu. A chill had crept into the air as it usually does even after the warmest day on those high Colorado plaius, but it seemed early in the eveuing for the change. He wondered, as he crept cautiously in beside Letty, if the chill were iu himself, some ugly premonition which he dared not consider. As if iu answer to his thought, Letty seemed to draw closer to the wall.

"It's all right, Letty," he whispered. "I'll get the money for you so you can start to-morrow."

She did uot answer.

He leaued over her and peered at her face in the darkness. The eyes were closed and the breath came and went with long-drawn regularity.

"Asleep, after all," he murmured to himself. "Well, I'll give her a happy surprise in the morniug."

Vague, uuhappy thoughts pursued him and he could uot sleep. The day had been unusually hot and the fever of it seemed to linger in his braiu. He tossed and turned and thought lougiugly of the last shower. Away iu the distance sounded a low rumble of thunder and he closed his eyes with a sigh of relief. He must have slept a few moments while the storm gathered, but he was uot aware of it.

Suddeuly a crash that seemed to him like the falling of the roof brought him to his feet before the window. Before him was a sea of hail aud fire, around him a roar like Niagara. The glass of the kitcheu window, facing the storm, came crashing and tiukliug in, and still Letty slept.

Dazed and benumbed at first, John thought of nothing but the fury of the storm; then he remembered the cow, standing unsheltered in the yard. He must manage to house her with the horses. Poor brutes! They must all be frantic with fear.

Hastily donning his heaviest clothing he mechanically lighted a lantern aud opened the door. The storm leaped upon him like some savage living creature thirsting for his destruction. The glass was dashed from his lantern and the light extinguished in an instant; but he needed no light, the lightning flashed coutinuously.

The thick cap on his head seemed uo protection, so cruelly did the hailstones bruise and cut; but it doubtless saved his life as he made his way from house to baru aud once more back to the house after his deed of mercy was done.

He was startled as he opened the door to find Letty stauding just inside, white and rigid, looking like a ghost in her long white gown.

"Oh, John," she cried, breaking into terrified sobs, "are you safe? I heard an awful roar aud turned to find you and you weren't there; and, oh, John dear, I thought I had lost you forever! Oh, you're all wet and your hauds and face are bleeding! Let me help you."

She took the broken lantern from him and hung it carefully ou its nail, drew the cap softly from his bruised head, tugged at the wet buttonholes of his coarse coat, and still he stood as one half-conscious. The thought of what this storm meaut had only just occurred to him.

"Letty, Letty," he groaued brokenly, "it's all gone! The wheat's all gone—our little garden—the young orchard—everything. I was going to get the money to-morrow, dear, and let you go: but now I can't, and the mortgage! Oh, Letty, what can I ever do?"

The heavy dripping coat was off now, and Letty was trembling aud shiveriug iu her thin gown, but her cheeks were pink once more and she was not crying. Johu felt a special sense of thankfulness that Letty was not crying.

"It's all right, Johu."

Her voice was exultant, joyous.

"Let the hail come; it's all right. I'm glad it came. If it hadn't—oh, Johu, I don't kuow what we're going to do about the mortgage aud everything, but if it hadn't come I was going away to-morrow! Oh, I don't know how to tell you! Say you'll forgive me before I tell—say you'll forgive me."

"For what, Letty?" His miud was in a whirl of uneasy conjecture.

"For—for just anything. Oh, say it, John, I can't go on unless you do!"

He sank into a chair aud drew her shivering form into his arms.

"Tell me, Letty. Of course I'll forgive anything there is to forgive. You don't think I blamed you for wanting to go? You've always beeu so sweet and patieut before, I know you couldn't help being upset. Listen! If your mother has sent you money to go with, you must go. Never miud the hail. That's it, isu't it, dearie?"

She shook the head that nestled on his shoulder.

"I'm so afraid you won't forgive when you know. Keep on saying it, John. Could you forgive if somebody else seut the moucy, somebody I knew wheu I was little—just to leud it to me, you kuow, because Mother wanted me so? Say yes, John."

"Yes," auswered John with a metallic sound iu his voice that made her cliug, shiveriug, closer to him.

"Could you forgive me if it was someone you don't like, seeing I'm not going at all, because you know I'm going to send the money right back to-morrow and stay aud help you, dearest? We've got something left, stock and chickens—the hailed wheat will feed them and I love to raise chickens. You know the hail won't come auother year, aud we're going to have just the banner farm of this county, you and I—and the baby, Johu. You will forgive me for the baby's sake?"

"Yes!" the voice was muffled and choked uow.

"Because I'm sure uo wrong was meant, and I know I didn't think of harm wheu I planned to go; but I can see now how terrible it might have been. Oh, how can I tell you! Didn't you notice the writing, John? It wasn't from Mother nor Elsie nor auy of them. It was—how cau I ever do it? John, it was from Bob."

"The scoundrel!"

He sprang from the chair and thrust her at arm's length.

"Forgive?" he suarled hoarsely. "That sneaking brute! No harm? He never meant me anything but harm—never, in all the years I've known him; and you'd have taken money from him! You'd take his money to go where you'd see him day after day and leave me here—alone!"

He turned glaring eyes on Letty who had sunk to a sittiug posture ou the edge of a chair, her hands clasped tightly before her, her upraised eyes despairing, abased, full of pleading love. Oh, if he could ever forget that look or the sound of her voice as she besought him:

"Please, John, for the baby's sake—and won't you, just a little bit, for mine, Johu, because I'm glad I'm here?"

He stepped back, appalled at her expression, then gave a little choking sob and caught her closely in his arms.

"Oh, Letty!" he whispered. "Forgive me—forgive me."

BEGINNING, NEXT ISSUE, one of Annie Hamilton Donnell's best stories. The title of this story is "How Judith Cured Herself." It is a story of victory, but you will admit, as you read it, that when Judith began her career on the farm she had few chances for success. Her father and mother were against her, even though they loved her. The beauty of her life was that she won. That is why you will enjoy the story.

EW

Sunday Reading

Where Wild Violets Grow

By Abbie Graham

THE violets were thick along the rich soil of the river banks. Soon I came to some blossoms growing out of a large rock. There was no rich soil about them, but they were growing away cheerfully. Of course they were not as large as the ones down on the bank, but they were beautiful to me, for they were doing their best.

Then I looked up with new understanding of the girl who was gathering violets with me.

Away off there in that lonesome little farm home she too was bravely growing. It was three miles to her country school, and few people would want to walk three miles to get no more than she was getting there. When I asked her what made her shoulders so stooped she showed me the desk at which she had had to sit in this school.

Going to church was not meaning very much to her either. I learned the reason why when I went to church with her. As I looked at that country preacher I envied him his opportunity. These people had come far to receive his message, and his was the only sermon they would hear that month. If only he would talk to them about living! But his sermon was one of the thunderous, judgment kind. Why, you would think he was glad that meningitis had killed so many people that year, and you would think that dying was the most important thing about living. And outside it was spring, and the red buds, the wild plums, and the wild violets were all in bloom.

"What are you going to do with your life?" I asked my rock-violet girl. "Are you going to college?" She is bright and original and needs only a little rich soil to blossom in.

"Well, I'd never thought," she answered. "Why, maybe next year I'll go up about Fort Worth visitin'."

In the days since, I've often thought of this girl with whom I gathered violets. What will she do when the long winter rains come, and she is shut up inside of that little home? I wonder if she isn't very lonely now that the "visitin'" is over?

What is the matter with you and me? Christ came to bring the more abundant life to all girls. Is it because you and I have never brought Christ into our communities that some lives are half-starving in the shallow soil of the rocks? He said, you remember, that we could have all the power, all the "dynamite," that we need. Wouldn't it be splendid if every more fortunate girl would take time to get some of this dynamiting power and then use it to tear away those rocks?

How interesting it is to experiment in the great laboratory of life and to analyze the soils of our home communities in order to discover what they need so that happy human lives will grow in them! What a fine world it would be if everyone were given the opportunity of a good soil to blossom in!

AND behold, one came and said unto him, Good Master what good thing shall I do, that I may have eternal life? And he said unto him, . . . If thou wilt enter into life, keep the commandments. —MATTHEW 19: 16, 17.

Our Job

By Chas. B. Driscoll

THE Man on Horseback rides abroad, his flag of war unfurled, and from his terrible right hand the bolts of death are hurled. He rides among the flower beds where Belgian peasants toiled. The laborers are lying dead, their farms and homes despoiled.

He rides among the barley fields and vineyards of Lorraine; the fields are desolated and the roads are choked with slain.

The husbandmen of Russia's steppes have turned their shares to swords. But who will gather in their crops and feed the hungry hordes? Ten million men in uniforms now seek each other's lives, while Famine, Pestilence, and Want claim mothers, sons, and wives.

O Farmers of America, while Europe blindly reels and views the havoc she has loosed, to us the world appeals! Now must we grow two ears of corn where one ear has been grown; now must we sow the thousand fields which never have been sown.

Europe has gold to trade for wheat. She's calling for our bread, the while she plows with dynamité and reaps her crops of dead.

Housewife's Club

Frozen Cherry Salad—Moisten one teaspoonful of gelatin with one tablespoonful of cold water, and pour over it one-half cupful of boiling water to dissolve it. Drain one pint of juice from a can of cherries, add the gelatin, and sweeten to taste. Then freeze as you would an ice, and let stand for an hour. Arrange in mounds on crisp lettuce leaves, add the cherries, and cover with mayonnaise dressing.

MRS. M. H. MCLEAN.

Creamed Rice Pudding—Cook in a double boiler a cupful of rice in three-fourths pint of milk. When the rice is soft put it through the vegetable press and add one-half cupful of apple or other fruit juice, the yolks of two eggs, a tablespoonful of granulated gelatin that has been dissolved in one-fourth cupful of hot water, and, at the last, the stiffly beaten whites of the two eggs. Turn into a mold, and chill thoroughly before serving. A. M. O., Illinois.

Cornstarch Puddings—For fruit puddings use fruit juice instead of milk, and thicken in the usual manner. Strawberry, pineapple, raspberry, and cherry juices, sweetened, make delicious puddings. BERTHA B. STREETER.

Blackberry Rolls—Roll biscuit dough thin, cut it in squares four inches wide and eight inches long. Spread with berries. Roll up the crust, and put the rolls in a dripping pan, not very close together. Put a piece of butter on each roll, spice if you like. Sprinkle over a large handful of sugar and a little hot water, and bake. Serve with sweet sauce. HELEN SYMAN.

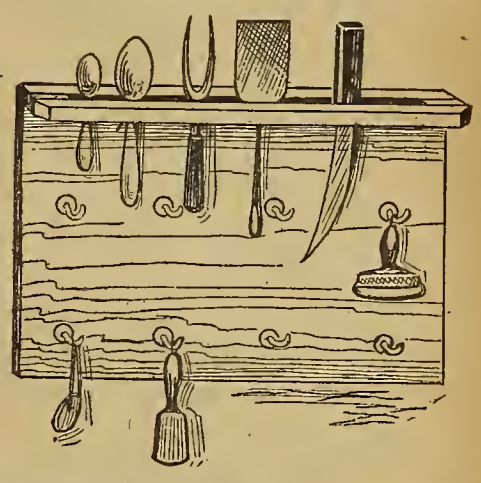
Berries and Fruits—Berries and sliced fruits are most appetizing when served in glass saucers, surrounded with cracked ice, and with a spoonful of whipped cream added. Watermelon cut into inch cubes from which the seeds have been removed is far more delicious if served with cracked ice. Cantaloupe cups filled with shaved ice may be varied by heaping ice-cold whipped cream in them. BERTHA B. STREETER.

To Lower the Oven Temperature—If the fire becomes too hot while baking or roasting, a pan of very cold water placed in the oven will lower the temperature with better results than by opening the oven door. The latter method cools the oven too quickly and sometimes, especially in baking, ruins the article that is being prepared. C. A. BYERS.

Almost a Refrigerator—A handy convenience for the housewife is a wide shelf outside the kitchen or pantry window, with a sloping roof over the same and wire screen across front and sides of shelf. The ends may be boarded up, which, if your window faces the north, is the nicest way. This is very handy for cooling pies, puddings, cakes, and the like, and even though one may have an ice box, it is very handy to keep eggs, washed vegetables, meats, and so forth. L. H., Wyoming.

To Keep Lemons—One housewife recommends putting lemons in a tightly covered can or dish. In this way they do not dry up. What has been the experience of our readers?

Utensils Handy—To have some of the most-needed kitchen utensils grouped together and hanging within easy reach of the cooking table is a great help to the housewife. Take a piece of board 18 inches long by 12 inches wide. At each end, and flush with the top, nail a strip of wood 18 inches long, leaving a half-inch space through which to slip knives, forks, and spoons. On the lower part screw in hooks to hold mixing spoons, egg beater, tea strainer, potato masher, can opener, and the like. Screw the board to the wall within arm's length of the table. ANNIE M. RICE.



THE NOTE-BOOK OF AN ATTACHE

Seven Months in the War Zone, by Eric Fisher Wood

THE CENTURY CO. counts itself fortunate in being able to announce this book for immediate publication. It is the straight story of a young American who had peculiar opportunities to observe the European War at close quarters. In July of last year he was a student at the Beaux Arts, and on the outbreak of hostilities he offered his services to Mr. Herrick, American Ambassador at Paris, and was at once set to work in the Embassy. As he was familiar with the German language, his first duties were with the Germans and Austrians who applied to the Embassy for help. On the 12th of August he writes:

"To-day about five hundred Austrians and Hungarians poured in upon the Embassy. I examined one hundred and sixty-four cases between two o'clock and half past four, and gave monetary assistance (furnished by their government) to one hundred and twenty-one."

During the months of September, October, and November, Mr. Wood made four trips to the front, covering territory which extended along the battle line from Vitry-le-François to a point northeast of Boulogne. He saw parts of the Battle of the Marne, of the Aisne, and of the struggle for Calais.

After work in the American Ambulance Corps, Mr. Wood was sent to Germany by way of Berne.

"There were two barriers straight across the road, the nearer one guarded by numerous Swiss soldiers, the farther, some twenty yards behind, by soldiers wearing spiked helmets. Before we were allowed to pass the first barrier, our papers and luggage were minutely examined by Swiss military and customs officers. We then walked across the twenty yards to the second, the German, barrier, where we were conducted into a little guard-house. An efficient sergeant examined our papers and then allowed us to pass the second barrier into Germany."

Mr. Wood spent some time in Berlin, and was then sent with despatches to England. He was watched by German detectives on the way. After being in England for a short time, he returned to Berlin, and was then sent with despatches to Vienna, thence to Budapest, where he visited the "grand old man of Hungary," Count Apponyi. He had a most interesting interview with the Count, which he reports in full.

Mr. Wood says that, although his personal sympathies are with the French, he has tried to observe dispassionately and accurately, and has scrupulously aimed to present his facts uncolored by preference or prejudice.

The book is full of side-lights, and its appendix is a valuable report on the different branches of the military service of both the Germans and the Allies. Mr. Wood describes the action of the infantry, artillery, cavalry, aeroplanes, medical corps, etc., of all the armies. This report is for use in the War College of the United States Army, and has been put on the official list of suggested reading for army officers sent out by the U. S. Army Service Schools.

The book is illustrated from photographs and with reproductions of various documents used by Mr. Wood in his travels.

8vo. 350 pages. Price $1.60 net, postage 10 cents

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For Finishing a Story

THE first part of it is in the WOMAN'S HOME COMPANION for August. And you need only to answer these two questions:

Why did Barry dine with another woman instead of going to his own engagement dinner, and why would he not explain to Ruth?

What did Nora say in the letter she sent to Barry?

You need to write only fifty words or even less to compete for one of the prizes.

"You, too, may have a lovely skin"

Alice Farnham Leader, M. D., says so in the August COMPANION. "No matter what the contour of your face may be, the texture and natural color of the skin make beauty. And you may create this beauty." Dr. Leader tells how.

Are You Vain Enough?

Read what Anne Bryan McCall says about the value of the right kind of vanity in her Tower Room Talk.

This August issue is called *The Vanity Number*. But it is rich in other features. "TULLE AND TIPPERARY," the tale of a funny, mixed-up, beautiful wedding, is one of seven fiction stories. "The New Crochet Work," by Helen Marvin; "Colored Embroidery for the Porch," by Evelyn Parsons, and real news about the weather are among the features

In the August

Woman's Home Companion

If there is no newsdealer near you enclose fifteen cents in an envelope addressed to THE CROWELL PUBLISHING COMPANY *(publishers of Woman's Home Companion, The American Magazine and Farm and Fireside), Springfield, Ohio.*

Increase Your Income

One Man Found Happiness Working With Bees

By FRANK G. ODELL

SUPPOSE you saw a man open a hive of bees and put a hatful of them on his unprotected head, scoop up a quart and tuck them snugly inside his shirt next the skin, throw a handful in his face and then poke two or three in his mouth and smile at the wondering crowd.

Then, to add to your wonder, suppose he entertained his audience with a half-hour talk on beekeeping or better farming while the bees poured out of his collar and swarmed comfortably over his unprotected person. And all this without being stung, except very rarely as a result of carelessness.

That this is possible the twenty million people who have witnessed the bee demonstrations of the writer on the fair grounds of America during the past fifteen years can testify. And of this twenty million folks I think nearly every one has asked, "How do you keep them from stinging?" I'll try to tell you.

First Hive Cost Five Dollars

This must necessarily be a story in the first person singular. It is about how a man in broken health, with a houseful of babies, found health, happiness, and a living by getting acquainted with the bees. My first hive, bought for five dollars to furnish recreation while dodging the undertaker, grew to two, to a dozen, to fifty—and to a living. This implies some hustling, but the bees did most of it. They'll do it for you.

This is no "get-rich-quick" story. It is no pipe dream about making a fortune from the labors of the 300-egg hen or growing ginseng for Chinamen. Neither does it deal with the somewhat elusive profits to be had from growing mushrooms in a cellar. It is just an average experience of an average man.

The most of my success with bees is due to the fund of information in the books on the craft. These are not expensive. Indeed, you can get Farmers' Bulletin No. 477 on Beekeeping for a nickel by writing to the Department of Agriculture at Washington, and it's one of the best of bee books.

The best sting preventer is to have gentle Italian bees, such as may be secured from any reliable breeder. With such stock, being further fortified with a dollar bee smoker and a 60-cent veil to cover the face, stings are reduced to the minimum. Bee gloves are a nuisance and are speedily discarded by the thoroughbred apiarist. The delicate manipulations of the hive require bare fingers. Indeed, my preference is to work with sleeves rolled up to the elbow. This prevents bees from creeping under the sleeves, when they are apt to become confused and sting.

To furnish recreation while dodging the undertaker was the reason he bought the first hive of bees

The next best sting preventer is confidence in your ability to handle the colony. This comes rapidly with experience. Confidence, careful movement, and a little smoke at the right time will handle any bees I have ever tackled—and I've had some bad ones. All the details of manipulation will be found in the bulletin you are going to get from Uncle Sam.

These ordinary and very essential means of protection do not explain, however, the sensational things done by the professional bee demonstrator, who shuts himself in a wire cage and does hair-raising stunts. This is a far different thing from handling bees carefully in the seclusion of the back yard. It is not only different, but it is much easier.

Astounding as this statement may seem, I would rather undertake to handle fifty thousand bees in the mass, bare-handed, bare-headed, and without protection, than to tackle the same colony in the ordinary way. This demands explanation.

Twenty million persons have seen Mr. Odell's bee demonstrations at fairs during the last fifteen years

That much abused term "confidence," which is overworked by politicians, is the biggest asset in handling bees or men. Coupled with a knowledge of your subject, it is well-nigh invincible. The psychology of handling bees is very much like that of handling men. Given the requisite degrees of confidence and ability, the rest of the job is easy.

Among humans all degrees of intelligence, education, or physical fitness yield alike to mastering impulses. For illustration, witness the psychology of a panic-stricken crowd. Here all physical or mental fitness yields to the impulse of the moment. It is much the same with the bees.

A hiveful of bees dumped in a mass with a sudden jerk which dislodges them from the combs must be imbued with a sense of panic. Bees, being creatures of intelligence, are like humans in that they can think of but one thing at a given time with success. Under the condition set forth, panic usurps the individual sense of self-defense which leads the abused bee to sting. If that is not the answer I have none, and thousands of demonstrations under every sort of conditions appear to demonstrate the theory.

Do not gather from this that there is no danger involved in the gentle art of doing stunts with bees for the entertainment of the multitude. The operator must be "on edge" every second to avoid unnecessary movements which will anger his pets. And when the job is over he has earned his money.

Bees Make Quick Money

My first two colonies of bees were increased to twelve the first summer by following "artificial swarming" methods. Thirty dollars' worth of queens were reared and sold. This brought us to winter quarters with a little profit.

The next spring 16 colonies were bought from a farmer for $50. These were utilized with the previous year's increase for more increase and for queen-rearing. A little over $500 revenue was received from queen sales and about 60 colonies put into winter quarters. From this on the way to success was comparatively simple.

I know two men in a Midwestern city who each make from $800 to $1,000 a year from sales of honey and bees. They do it in the limits of a back yard with neighbors all about. Two hundred people might do equally well in this city, as bee pasturage is good. One of these men works at his trade as a carpenter; the other is a policeman.

The best thing about the bee business is that it gives common folks a chance. A carpenter or a policeman stands as well in bee society as a college professor. And when it comes to understanding how to coin sunshine into golden nectar, and faith into happiness, the bees beat all the college degrees in the universe.

W

FARM and FIRESIDE

The National Farm Paper - Every Other Week

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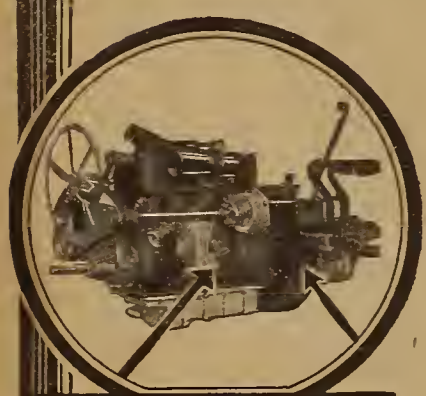

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EW

FARM and FIRESIDE

—PUBLISHED BY—

THE CROWELL PUBLISHING COMPANY, SPRINGFIELD, OHIO

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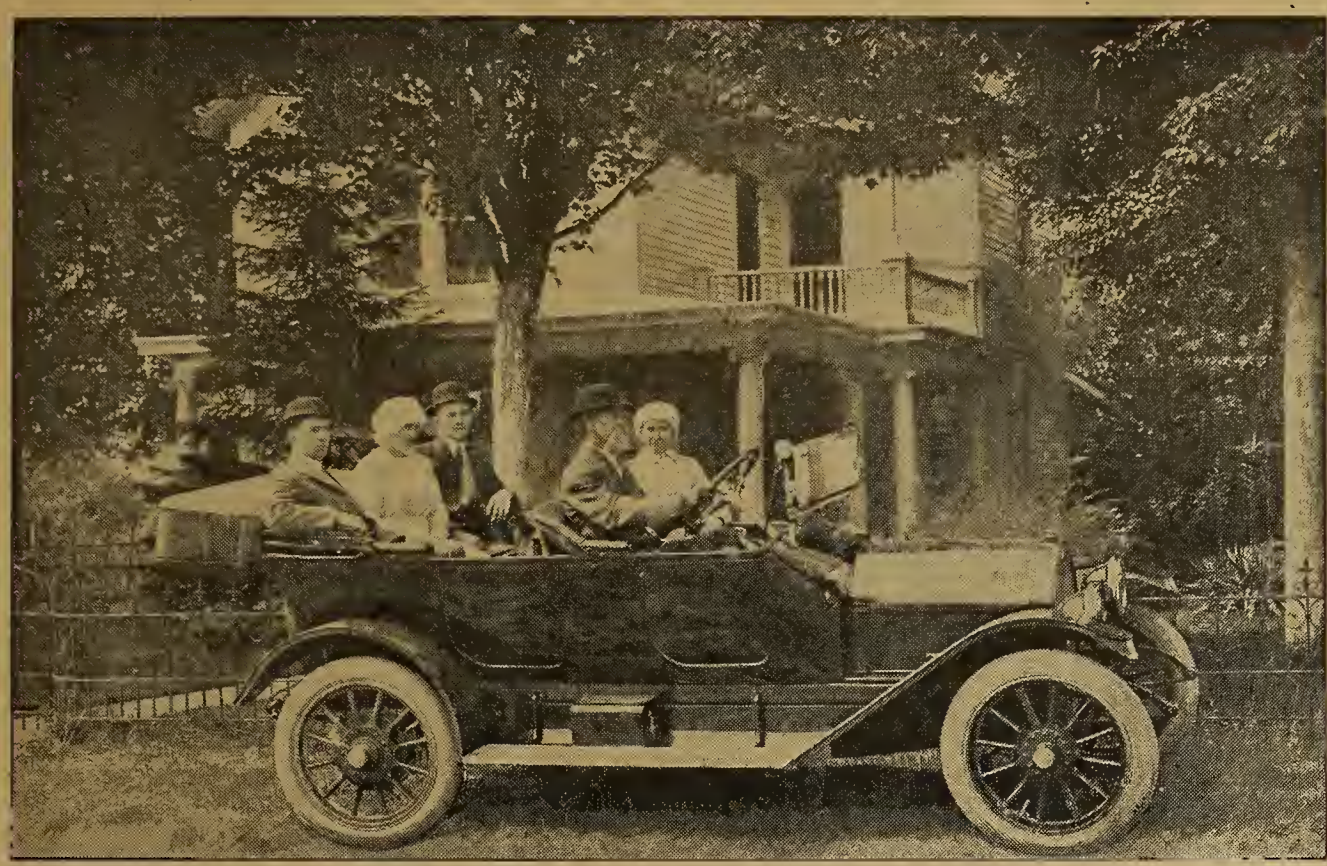
Vol. XXXVIII. No. 23 SATURDAY, AUGUST 14, 1915 *Published Bi-Weekly*



An owner of three automobiles in the last seven years, J. R. Rickard of Scott County, Indiana, believes a motor car is somewhat expensive, but that it is worth all it costs, and that accidents are due to fast driving

Brings Life Bubbling

A Motor Car Keeps the Boys and Girls on the Farm

By D. D. WAGNER

A contest on "What's an Automobile Worth?" was held recently by FARM AND FIRESIDE. Cash prizes were offered. The letter "Brings Life Bubbling" won first prize. The second prize was awarded to "Sells More Fruit." Many of the letters are printed on this page and the next page. Other prize-winning letters will be printed in following issues.—Editor.

OWNING an automobile is like having a wife: a constant expense, pecks of trouble, hard to get along with, but—once you have one—harder to get along without. That $100 you just got hold of and were going to salt down in the bank, you suddenly find is gone for new tires. Last week when you simply had to catch the train, the carburetor took its semi-occasional lay-off. But, also, you've gone time and again in a hurry and returned in tiptop shape.

When the knotter on the binder broke, and wind and clouds threatened bad weather on the morrow, the motor car took you to town and you were back with the new part before the horses had a good rest, and the field was cut by sundown.

By this speedy tireless helper you have a bigger and better market for butter, eggs, poultry, fruit, vegetables, all the smaller products of the farm, and you don't need to kill a whole day going to town either. The boys can go to see moving pictures of the war, hear a concert by Sousa's Band, or can see the state league ball game, when the work is not too pressing.

The old homestead has become the most attractive place on earth for both the boys and the girls. The old folks are twenty years younger, and spruced up like young folks. They were going to retire to the city, but thought better of it when they bought the car.

Yes, it's a bigger world and a better one, we've discovered. Do without a car? Might as well ask us if we'd go back and live in our first two-room shack. Our automobile is worth a big, bubbling life to us.

Sells More Fruit

A Car Brings City Markets Nearer

By R. H. SMITH

I BOUGHT an automobile for $750 two years ago. I borrowed all the money to pay for it, at eight per cent interest. The car was a standard make with detachable rear seat, and though run 10,000 miles it was still in first-class shape. To most persons this might seem a foolish investment, and I shall confess it worried me until I began to see its advantages.

I have a small berry ranch near Sebastopol, California. My nearest market is twelve miles distant. By removing the rear seat of my automobile, and using it as a truck, I have been able to deliver a ton of fruit daily to three small towns, all through the summer, with less work and shorter hours than with a team. I have also gained from twenty to thirty cents on the dollar because of more prompt delivery and ability to reach markets otherwise unavailable.

The cost up to date of my car is: First cost, $750; repairs, gasoline, etc., $520.

During the two summers I sold berries to the value of $4,383.62, gaining $856.70 over what I could have obtained had I used a team.

My car has proved itself a source of profit, pleasure, and health to myself and family.

This car proved a source of profit to R. H. Smith of Sonoma County, California, and brought pleasure and health to himself and family

E-W

Enjoys a Car

Fast Driving Causes Accidents

By J. R. RICKARD

I HAVE bought three new automobiles for my own use during the last seven years, and I believe that they are a luxury pure and simple. Anyone investing money in one and expecting to get out as much as he puts in will likely be disappointed. It is an expensive piece of machinery, also a very dangerous machine in the hands of a reckless driver. Nine out of ten automobile accidents come from too fast driving, or refusing to "Stop, look, and listen."

Nearly every day during the summer months I read in the daily papers about a motor-car accident somewhere, due to fast driving or carelessness. Either the car was going at such a fast speed it skidded and rolled off an embankment into a ditch, or the driver wasn't watching his business and didn't see or hear another motor car coming, or a train.

For a family car always buy a touring car. Then get your family and friends in, and drive at the rate of fifteen miles an hour; and never drive more than twenty miles an hour, and that on a good smooth road. We can visit our friends twenty or thirty miles from home and return home the same day. We have traveled thousands of miles during the last seven years.

We have seen miles of country, and towns twenty, thirty, and forty miles from home that we would most likely never have seen had it not been for the automobile. We nearly always take some of our friends with us, which makes it more pleasant. Just mention to some of your friends who do not own a motor car that you would like to take them out for a ride, and see how quick they can be ready to go.

I have taken ladies eighty years old out for a ride, and they enjoyed it just like a child. If there are invalids in the family or neighborhood, take them out and see how much good it will do them, and you too.

Although an automobile is somewhat expensive, we feel that it is worth all that it costs. But always remember that the safety of the persons in the car depends upon the carefulness of the driver.

Time is saved on the Glyde Frost farm in Caldwell County, Missouri, by doing the family trading in town during the noon hour while the horses are resting

Runs at Low Cost

Gasoline Bill is Half Cent a Mile

By GLYDE FROST

ONE way we save time with our car is by doing our trading at noon while the horses rest, or in the evening after the chores are done. The automobile saves the farm horses many a trip on the road, keeps them in better condition, decreases the number of horses needed, and cuts down the feed bill. Keeping a driving team is absolute foolishness in this age of the world. The first cost will almost pay for a car, and the high price of feed soon makes up the required amount.

The first cost of a car is what counts. The fuel doesn't cost much unless the motor is kept on the road most of the time. At the price of gasoline last year, our light car cost one-half cent a mile. You frequently hear people saying, "Yes, something is always breaking, tires bursting, or having a puncture."

The driver is responsible for a whole lot of this. In two years' time our only tire trouble has been one puncture, and the tires are apparently as good as ever.

Gets Full Value

Automobile Provides Recreation

By HENRY HATCH

THE automobile I have owned since November 1, 1909, has been worth a great deal to me. I live eight miles from the nearest town, and must make trips to market with eggs and dairy products at least once each week, and oftener during the summer.

Because I have a motor car I probably take the eggs and dairy products to town more often during the summer than I would if I didn't own a car. This means fresher products for the merchant and better prices for me.

Just when the weather is warmest and the teams busiest the automobile runs best, as the roads are always fine then, and the engine works best when the weather is hot.

But my use for the automobile is not confined strictly to marketing. It is used for pleasure and visiting, both winter and summer.

Marketing with the car saves me much time, and keeps the horses in better condition. We can visit friends in any part of Coffey County and adjacent counties easily. We all get a great deal of pleasure in taking a ride through the country after supper has been eaten and all of the chores done. Often we drive to some neighboring town for an evening's entertainment.

My car has been worth to me all it cost, $1,400, and all it has cost to maintain. All repair, replacement, grinding valves, and other necessary work on the car I do myself. Counting nothing for this work, but allowing for depreciation and the cost of the tires, gas, and oil used, I am able to say that the cost a mile of automobile travel is five cents. That is based on five and one-half years of use.

Favors Five-Passenger Car

My car is a five-passenger, touring type, weighing 2,200 pounds, with 30-horsepower engine, and 3½x32-inch tires. For exclusive country use a car of this size and weight can hardly be improved upon. It is heavy enough to stand rough roads and the overloading to which a farmer is apt to subject it, yet light enough to "make" all roads easily and at reasonable cost for tires and gas.

Any farmer with the cash in hand or in sight can afford an automobile, and he can be assured that he will get from it in actual time-saving, money-making, practical use all that the car costs him, with worlds of pleasure besides. This pleasure will be in a form not obtainable without a car, for the automobile can be used when the teams are resting, and can make long trips in short time, trips you would not think of making without the car.

I haul 700 and 800 pounds in my car without trouble, thus proving its worth along practical lines. And the trip to town that used to take a long half day with a team is easily a matter of less than two hours with the car. After five and one-half years of use my car runs as well as when new, and should be good for at least five more years of dependable service.

Past seventy years old, Mrs. Viola R. Wilcox and her husband of Swift County, Minnesota, rented their farm, moved to town, and paid $1,700 for a car

Saves Doctor Bill

Motoring Proves Very Healthful

By HENRY REIER

JUSTIFICATION for financial sacrifice in buying a motor car depends on the reasons actuating the purchase. Where business reasons seem to make it imperative one may be justified in going to some extremes to possess a car.

The physician to-day loses prestige if he does not have a motor car. Many merchants find it a distinct help. The man with motor delivery will gain trade where the man with horse delivery will stand still or go backward.

If a car is desired purely for pleasure, one is scarcely justified in mortgaging a home, drawing the last dollar from the bank, or in any other way endangering his future financial welfare.

Where the health—perhaps the very life—of a member of the family is involved, and the use of a motor car to get him into the fresh air and sunshine seems desirable, no sacrifice is unreasonable.

I recall a case where an able physician did his utmost for a young wife who was in poor health, and all to no purpose. Matters were speedily becoming serious when the husband was inspired with the idea that a motor car might be the solution of the difficulty. Money was not plentiful in the family and the purchase required sacrifice. But with the first trip good progress was noted, and after several weeks the physician in charge remarked to the husband, "The car has done your wife more good than all my medicine."

Doubtless there are many similar cases. So my contention is that where business or professional considerations or the life or health of a member of one's family make a motor car indispensable, you may go to almost any extreme. But where pleasure only is to be considered, conservatism is recommended.

A man six miles from here mortgaged his home to buy a car. On the very first trip the car caught fire and was destroyed, leaving him without car or home. Don't go in too deep.

A $1,400 motor car has been worth to Henry Hatch of Coffey County, Kansas, all it cost him—both the first cost and the upkeep. He hauls 800 pounds of produce in this car without any trouble

Don't Go in Debt

Motor Car Isn't Worth a Mortgage

By R. C. GIFFORD

AN AUTOMOBILE is not worth any great debt-making sacrifice. If a man has to mortgage his home or farm or go in debt for a machine, he should not get it. Otherwise he should have a machine. The upkeep of an automobile is of course expensive, but the man who can afford one doesn't notice this. On the other hand, the man who can't afford one would have the upkeep to pay and also the interest on the borrowed money. The two combined would make the automobile a burden and a worry instead of a comfort.

For the man who can afford one its value can't be counted in dollars and cents. One day last fall the buildings on a neighbor's farm caught fire. In our machine I managed to get chemical hand extinguishers to the place before the house caught. After it was out of danger we reloaded the extinguishers and put out the fire in 500 bushels of uninsured wheat. Of course the wheat did not bring top price, but they were able to sell it. Besides these unexpected things the machine has been useful for so many hurried trips and saved so much time that I feel it has almost paid for itself.

One night after supper recently, when my mother and I were ready to start to town with a load of produce, a neighbor woman telephoned that one of her hives of bees had swarmed. She said I might have them if I could get them in a hive.

We drove to town, did our trading, drove to the home of the friend with the bees, and got the bees in a hive before dark. If it hadn't been for the machine, either the trip to town or the trip to the neighbor's for the bees would had to have been given up. There is much satisfaction in knowing one can, barring accidents, go somewhere without wasting a lot of time on the road.

Then again it is such a comfort and pleasure. The other day we had all worked hard and were tired and discouraged when evening came, because things had not gone well. Someone suggested that we go out. So we left home at seven o'clock, reached a nearby town in time to get seats for a good entertainment, and were back home by eleven. The next morning things seemed to untangle themselves and go along without a bit of trouble. If we had not had a machine we would have plodded off to bed at eight o'clock, each wishing in his heart that he was back in town.

With her machine Ruth C. Gifford of Cecil County, Maryland, drove several miles from her home and captured a hive of bees that had swarmed

EW

Makes Easy Living

Seventy-Year-Old Farmer Runs Taxi

By V. R. WILCOX

AN AUTOMOBILE is worth just what it is worth to you. It may be worth $2,000 to you or, under different circumstances, its possession may throw the balance on the wrong side of your ledger.

Husband and I are past seventy years old. Some time ago we decided not to run the farm because of difficulty in getting efficient help. So we sold the stock and implements, rented the farm for cash, moved into town one mile distant, and paid $1,700 for a five-passenger car.

Catering to the better class of livery work, keeping the car looking well and in good condition, we realized more profit than from the farm. The livery work is much easier, and the farm rent brings more than half as much as we received from it while doing the work ourselves. Had we stayed on the farm and bought the car with the money needed elsewhere, the little use we had for it would have made it an expensive luxury.

If one has plenty of money and can afford the luxury, a car is worth what one pays for it, because it puts money in circulation, gives honorable employment to the needy, and helps to add to the happiness of others, a matter that cannot be computed in dollars. For ourselves, we believe that in improved health, opportunities to enjoy many things denied us before, and as a recompense for our many years of hard work our car is worth all we paid for it. Financially, above the cost of repairs, in two years it has been worth $200 a year more than it cost.

Beware a Mortgage

Saving Money to Buy a Car is Safer

By MARYETTE WHEELOCK

AN AUTOMOBILE is not worth a mortgage on the home; it is not worth the hundreds that would make a substantial first payment on a home; it is not worth the money that should be invested in home conveniences; but it is worth saving for.

As a means of recreation for the family of moderate income it has no superior. The countryside for miles around is an open book to the man who owns and drives a car, and to own one is worth the concerted efforts of all the family. A car will pay for its cost many times in health and happiness of the family.

Repairs Machinery

And Sells It to Ten Thousand Farmers

By B. D. STOCKWELL

"Because your farm is small," Joe told the customer, "this walking cultivator would be better for you than the one you have your hand on"

ON a 24-acre farm in southwestern Ohio lives a man who proudly says, "I've found my life work." He buys and sells second-hand farm machinery. The man is an Austrian Jew. The farmers of Miami County, Ohio, swear by Joe Steuer. I should think they would, nor is there any good reason why someone in every farming district could not start a similar business.

"When I first came to this country from Austria," he told me, "I started in the produce business in New York City, but there I didn't fit. After a while I came west and settled in Dayton, Ohio. I bought a broken-down horse and broken-down wagon and started out buying and selling anything I could. But I liked the country and used to drive out to see farmers. For a long time business was not good, and my capital got down to $8. About that time I bought a plow one day for 50 cents. At the next place I stopped the man who knew me pretty well said, 'Joe, what did you pay for that plow?' I told him, and he said it was worth $5. So I took it home and kept it. The next year I sold it for $3. In that way I stumbled into this business.

"Business is Good" His Policy

"THAT year I invested in a hundred dollars' worth of second-hand farm implements picked up a few at a time. I found people would buy them after they were fixed up. The year after, I bought a thousand dollars' worth, the next year three thousand, and the next, six thousand dollars' worth. Since then I haven't kept track of my stock. Eight years ago I was rated at $10,000, and last year at $30,000."

When asked how he got his working capital, he explained that many of the transactions at first were made by notes, and to some extent even now. "This is why I have succeeded," he said. "When anyone asks me how business is I always say, 'Business is good.' When I say I'll be at a certain place at a certain time I'm always there. And I always pay my debts when they come due."

Four of his twenty-four acres are devoted to storage space for his machinery, and also for the huge junk piles of machinery past repair. A large barn and several sheds shelter the more perishable tools. The others are outdoors.

At the time of my visit (the middle of June) most of his 1915 business had been done. He had sold 87 corn cultivators and had 3 left; 60 disk harrows and had 1 left; 38 tobacco planters, none left; 11 manure spreaders, 1 left; 26 binders and none left. Among other sales were 18 grain drills, 10 gas engines, 8 cream separators, and 8 automobiles. Last fall he sold a complete threshing-machine outfit.

There's no style or formality about the place. A farmer drives in and says, "Hello, Joe," then hunts around till he finds the repair part or implement he wants. Then he finds Joe and pays the price. On busy days he has had as many as 175 customers, most of whom wait on themselves. It's a sort of machinery cafeteria. His hours are usually from 5 A. M. till 10 P. M., but subject to extension without notice.

"In the busy season they come mostly at night," he explained, "and then I have to take a lantern and find what they want."

From a neighbor I learned that Joe knew where every piece was and what it cost him. Hardly one man in a hundred goes away without finding what he wants.

Sometimes a man will break an important part of a machine—a binder perhaps. The piece needed is so unusual that few dealers would carry it in stock. To meet such a case Joe will take the part from a binder of the same make he has on hand and loan it to the man till he can get this repair part from the factory. Then when the part is returned he'll put it back on the binder.

Everything Joe sells is guaranteed to work. He does nearly all of the repairing himself, but for putting electrical machinery and large engines in first-class running condition he hires an expert occasionally.

Cream separators are guaranteed for two months, gas engines for one month, and other implements according to the time required to test them. A binder gets a guarantee of two days in the field.

For the poor man his place is a modern Mecca. Joe gladly takes their notes and a mortgage on their crops, and they pay when they make their crops. He showed me a school-size composition book. Five pages were devoted to lists of notes due him, amounting to roughly $30,000. His own notes due others totaled $9,000. He has about 1,000 regular customers and serves about 10,000 people every year. In his thirteen years of business he has sued for the payment of only six notes, and has lost just one bad debt of $10. The man was in trouble and Joe let it go.

When the haying season hardly had begun, the middle of June, only one hay loader was left out of a stock of eight

Little Faith in Used Autos

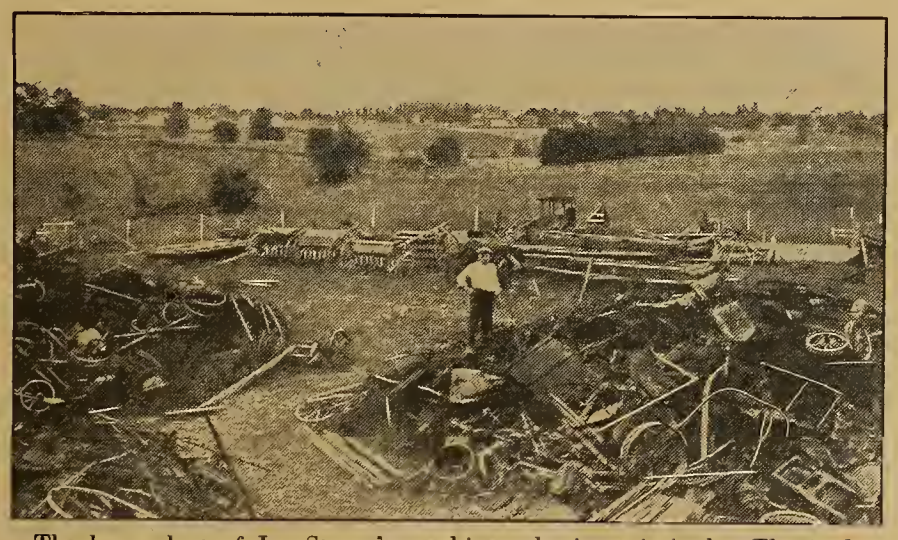
THIS is how he gets his implements. By far the greatest part he buys at public sale. He's a keen judge of values and few care to raise his bids. Perhaps they expect to get it from him next year on their notes. He attends about fifty sales every year. "Besides that," he added, "I'm undertaker for the implement dealers who fail in business. They'll call up and say, 'Joe, I'm in trouble, buy me out.' For instance," he explained, pointing to a new plow of standard make, "the dealer had to pay the factory $17.50 for that plow. I bought it from him for $10, with other goods of course. I sell it to the farmer for $15."

However, the new machinery is seldom of the most recent design, though it is standard and will do good work.

Later on I inquired of the restaurant proprietor in the nearest town how Mr. Steuer's business affected the implement business there. "A dealer here failed last year," I was told, "but it wasn't Joe Steuer's fault. The dealer was dishonest and people wouldn't stand for him. I'd rather do business with that Jew than with lots of Americans. You can rely on what he says. I got a good harness there yesterday for $6 that would have cost me $15 anywhere else."

When I asked Joe if he favored any particular make of implement, he shook his head and said: "No, I buy and sell them all. It doesn't make a bit of difference what it is. Used machinery is worth about forty cents on the dollar," he informed me, "and I figure on getting on an average about 25 per cent more for it than it it costs."

"There's one thing I don't like to sell, and that is a second-hand automobile. 'Man, you are buying a lot of trouble,' I'll tell a customer. Old automobiles are not good, but the price is cheap and they buy anyway."



The by-product of Joe Steuer's machinery business is junk. The junk piles are shown in a part of the four-acre machinery lot

Besides the machinery, which is his principal line, he dabbles a little in live stock and household goods. His horse sales last winter amounted to $4,000; furniture, stoves, and carpets to $500. Quantities of rope and rubber hose bought at city bankrupt sales are carried in stock. "I sold half a carload of rubber hose last year," he said, "and they keep coming for more."

In the fall he holds a sort of inventory. The best machinery is stored for the winter, some is dismantled for repair parts, and the rest thrown on the junk piles, of which there are three huge ones—enough to make a trainload, as I learned later.

A casual examination of the four-acre exhibition grounds showed that his stock contained among other things: 140 plows of all styles and makes; a whole farm slaughter-house outfit; stalk cutters, forges and anvils; fanning mills, push carts, and any quantity of shafting and pulleys; doubletrees and singletrees—probably 500 of them—hung from the orchard trees like a bumper crop; a shed was half full of binder canvases.

"I like to give every worthy man help," he explained. "There's no use to sit down on a man just because he's poor. But I want customers to be honest with me."

His advertising methods are simple, though perhaps crude. "I really don't need to advertise at all," he said, "because I have all the business I can take care of. I don't get much time for farm work.

"If a man I've never seen before comes, I ask him where he lives. Perhaps it's 25 miles out in the country and he's heard of me. Well, I'll sell him something very, very cheap, and he'll go home and tell all about it. It's just like putting a bell in his nose. I always want a man to go away satisfied, because then he'll come back and bring his friends."

His territory is more than local, though most of the business is done within a radius of 40 miles. Former residents who have moved to Michigan and Canada still buy from him.

Joe has one man to help him in summer and three in winter, when most of the goods bought at fall sales are hauled in, repaired, and classified. Half a dozen sheep browse around the machinery and keep down the weeds and grass.

He is 52 years old and hale and hearty. His wife and two daughters, just growing into womanhood, do the household work.

For timid customers he acts as adviser, telling them the tools best suited for their work. Sometimes they come to Joe when they have in vain tried to get a repair part from half a dozen dealers. One man drove 40 miles to get a part of a chain for a treadmill—and Joe had it. Another man wanted a machine to break corncobs. Joe didn't have it because there's no such machine made, but he showed him how to make one out of a threshing cylinder and concave, and sold him the parts needed.

No Vacation in Thirteen Years

HIS devotion to his business is obvious from the pride he took in pointing out strange and unusual machines that he had picked up from the four winds. He got a ladder so I could take pictures of his implements from the top of the tallest chimney. Junk piles are never attractive, but somehow the place was inviting. The man radiated enthusiasm, and in ten minutes I had a profound respect for him. He has no false pride about his second-hand business. He buys and sells with the dignity of a merchant prince.

"Very little farm machinery is worn out entirely," he explained, "but some people think it is when the paint gets scratched and the bearings begin to rattle. A little repairing and one or two new parts will make most machines as good as new if you just want service without the looks."

He showed me a cultivator he had bought cheap just because it was shy a shovel. "That won't take me long to fix," he added, "and then maybe the man I bought it of will want to buy it back.

"Farmers could save themselves a lot of money by keeping the nuts and bolts tight. But some are so busy they won't take care of what they have, and so a part of a machine like that shovel will drop off in the field and get covered up. Then they will probably decide to buy a new cultivator."

He mentioned this not as a reproach on carelessness, but to show how strongly his business was established.

When I asked him if he was satisfied with his success and intended to retire before long, his face became very sober. "No, I'll not retire," Joe said slowly. Then, extending his arms toward the huge piles of junk and the four-acre array of implements, he added: "I've not taken a day's vacation in thirteen years. I love that business."

From a binder to a gentleman's coach isn't far on Joe's farm machinery lot. It gives an idea of the range of the things handled

EW

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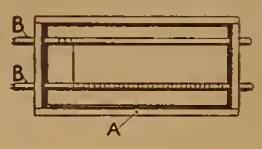
The Handy Man

How Fast Does It Go?



WHEN installing machinery to be driven by power you need to know the speed of the engine and the line shaft from which the power is belted in order to tell the size of pulleys needed.

The sketch shows a simple yet accurate device. It is just a wooden frame (A) having two holes drilled through each end for inserting the two wooden rollers (B B). At the left end of each of these two shafts are inserted two nails with their heads cut off and then filed to a point. A strong thread is fastened with a tack to one of the shafts and then coiled around the length of the shaft. The other end is fastened to the other shaft.

To measure the speed of any revolving shaft hold the two sharp points of the empty roller of the device against it, timing the length of the contact with the second hand of a watch, giving say three seconds; then quickly draw away the device. The number of coils of the thread on the roller tells the speed of the shaft measured. Thus if the length of contact is three seconds and the number of coils of thread is ten, then the speed of the shaft is 200 revolutions a minute. The thread should be long enough to complete a measurement without getting to the end and tearing. CHAS. I. REID.

Rungs Right and Wrong

THE professional way to repair a ladder when a rung has broken out is to take it apart and put in a new rung. But that is a long job and is likely to damage the ladder, especially if the rungs have been nailed. The following method will leave it looking nearly as well as ever.

Cut the new rung for a tight fit between the side pieces; then bore holes the size of rung in two hardwood blocks three fourths of an inch thick. Plane off the corners and edges, place ends of rungs in holes in the blocks, and then fasten the blocks to the inside of the ladder rails with small bolts.

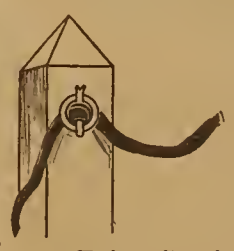
C. E. STERNBERG.

A Pick on the Plow

I CARRY a pick on my gang plow where the wrench goes. The pick is handy for digging out stones I strike. I also have a large bucket fastened to the seat with a snap. In this I put all stones that are not too large, carry them to the end of the field, and put them on a pile.

This work does not interfere with the plowing because it takes only about as much time as I would use to rest the team. EARL PETERMAN.

Tie Without Knotting



A TIE RING which does not require knotting the strap is indeed a useful contrivance. Here is one that can be made of an old bridle bit. Take a cold chisel and cut the bit in two near the middle. This will give you two rings with a short-hinged lever on each—enough material for two tie rings.

Now fasten the rings to the hitching posts, or to the barn walls at convenient places. Use large nails or staples and fasten the top of the ring so that the bottom will swing out.

In using this tie ring, double the tie strap and place the loop end through the ring from the under side. Lift the lever and place it through the loop in the strap. Jerk the strap sharply to bind it on the lever, and the tie is made. To make a more secure tie, place the end of the strap through the ring from the under side and give it two turns about the lever, returning the free end down through the ring on the opposite side of the lever. To unfasten either tie, lift the lever and slip the loop or loops from it. WALTER S. CHANSLER.

Ring for Grappling

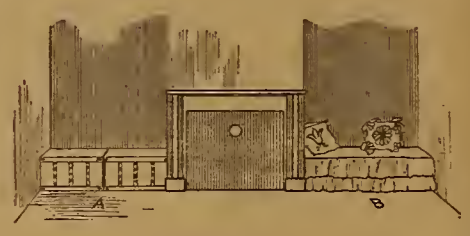
IF a pump rod or a length of pipe has dropped into a six-inch well, there is likely to be trouble in getting hold of it with a hook of any kind. If the object is in an upright position, procure a ring of iron just large enough to fall freely over the end. Such a ring may be made of heavy wire twisted into two or more strands.

Tie firmly to each side of the ring a long piece of small strong wire. With these two wires to hold the ring level, lower it into the well and over the object sought. If the object is above water, it may be seen by throwing the light from the sun into the well with the aid of a small mirror. If under water, it can be located only by trial or feeling.

When sure that the ring has settled over the end of the pump rod, pipe, or other object, release one of the wires so that all the weight is on the other. This pulls the ring one side above the other, and the harder the pull the more tightly it holds. H. F. GRINSTEAD.

Cozy-Corner Storage

AFTER unsuccessfully trying numerous methods of wintering sweet potatoes I concluded that as our dining-room was kept at an even temperature



throughout the winter it would be a good place to store them.

I found that two large strawberry crates would fit snugly into the recess on each side of the chimney. (See A in sketch.) So I dried the potatoes around the stove, then filled the crates, fitting the tubers in closely. Then I folded a blanket over the top and threw on a couch cover, letting it hang loosely down to the floor as in B.

After applying sofa cushions I found I had two rather attractive additions to our room which were admired by all callers, who often referred to them as "your charming cozy corners."

Our "corners" held eight bushels each. As I leave out in the pantry enough to last until severe weather sets in, we have enough nice mealy "sweets" to carry us throughout winter and spring. I have used this method with complete success for nine years.

MRS. T. H. LINTHICUM.

No Sediment from Tank

AN ELEVATED tank or cistern will in time accumulate sediment. To prevent drawing this out through outlet pipe a piece of rubber hose should be fastened onto the outlet pipe where it enters the tank. The hose will necessarily be long enough to reach to the top of tank or to the highest water level. In order that the open end of the hose may at all times be a few inches below the surface of the water, where it will never disturb the sediment, it must be attached to a float. Take a gallon jug and cork tightly; fasten the hose to it by tying with a strong cord to the jug handle. A small weight also tied to the handle will partly submerge the empty jug so that the end of the hose will always be beneath the surface. As the water rises or falls in the tank the jug floats with the water level, carrying the hose so that it gets clear water from near the surface. Another outlet for draining and cleaning should be provided at the bottom of the tank. H. F. GRINSTEAD.

Uses for Old Hoes

ON a rocky piece of land last year we broke several hoes off right up near the shank. One of these is kept around the wagon shed for scraping mud and dirt from the wagons. Another use was this: I drilled two eighth-inch holes three inches apart near the broken edge of one, then made a handle of hickory and fastened it across the broken edge with small bolts run through the wood and the holes in the hoe, as in the sketch. Then I thoroughly scalded and cleaned the hoe, ground it to a very sharp edge, and used it for a kraut cutter.

Holes were drilled in two more of the hoes, and after they were screwed on the front and back steps, extending two inches above the steps, made fine shoe scrapers. CLARA B. PARKS.

NO IDEA

What Caused the Trouble.

"I always drank coffee with the rest of the family, for it seemed as if there was nothing for breakfast if we did not have it on the table.

"I had been troubled for some time with my heart, which did not feel right. This trouble grew worse steadily.

"Sometimes it would beat fast, and at other times very slowly, so that I would hardly be able to do work for an hour or two after breakfast, and if I walked up a hill, it gave me a severe pain.

"I had no idea of what the trouble was until a friend suggested that perhaps it might be coffee drinking. I tried leaving off the coffee and began drinking Postum. The change came quickly. I am glad to say that I am now entirely free from heart trouble and attribute the relief to leaving off coffee and the use of Postum.

"A number of my friends have abandoned coffee and have taken up Postum, which they are using steadily. There are some people that make Postum very weak and tasteless, but if made according to directions, it is a very delicious beverage." Name given by Postum Co., Battle Creek, Mich.

Postum comes in two forms:

Postum Cereal—the original form—must be well boiled. 15c and 25c packages.

Instant Postum—a soluble powder—dissolves quickly in a cup of hot water, and, with cream and sugar, makes a delicious beverage *instantly*. 30c and 50c tins.

Both kinds are equally delicious and cost about the same per cup.

"There's a Reason" for Postum.

—sold by Grocers.

The General says:

We have built up the biggest Roofing and Building Paper mills in the World by selling materials that last—at reasonable prices.

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Roofing

Our *Certain-teed* Roofing is giving excellent service on all classes of buildings all over the world in all kinds of climate. It is the roofing with a guarantee of 5, 10 and 15 years for 1, 2 or 3 ply respectively, and it is backed by the responsibility of our big mills. Try it once—you'll buy it again. For sale by dealers everywhere at reasonable prices.

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World's largest manufacturers of Roofing and Building Papers

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SAVE HALF Your Paint Bills

By using INGERSOLL PAINT—proved best by 66 years' use. It will please you. Only paint endorsed by the "Grange." Made in all colors—for all purposes.

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Tells all about Paint and Painting for Durability. How to avoid trouble and expense caused by paints fading, chalking and peeling. Valuable information free to you, with sample Color Cards. Write me. DO IT NOW. I can save you money.

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ELECTRICITY FOR FARMS

Have good, reliable current for both light and power in house and barns at low cost with a

MATTHEWS Automatic Light and Power System

Absolutely safe, simple and easily operated. Send for catalog. Agents wanted.
THE MATTHEWS BOAT CO.
504 Laurel Ave., Port Clinton, Ohio

"Try-a-bag" of fertilizer. Our brands are soluble and active, and not only increase yield, but improve quality and hasten maturity. Agents wanted. Address American Agricultural Chemical Co., Cleveland, Cincinnati, Detroit or Baltimore.—Adv.

Harvey Bolster Springs

RACINE

The standard springs of America since 1889. Make any wagon a spring wagon. Prevent damage to eggs, fruits, etc., on road to market. Soon save cost—produce brings more—wagon lasts longer—easier for driver—easier for horses.

Made Like Finest Auto Springs

Highest grade steel. Very resilient and durable. All sizes—fit any wagon up to 5 tons capacity. If not at dealer's, write for circular showing how Harvey Springs save money.

HARVEY SPRING CO., 729 17th St., Racine, Wis.

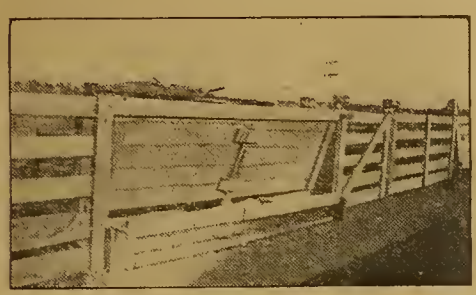
GUARANTEED

What Others Do

Feed Without Splashing

THE pictures show a good way to feed swill or milk to hogs without indulging yourself in the usual splashing.

The solid fence panel is hung on hinges over a trough. When you are



Ready for the feed

Hogs at work

ready to feed you push the panel forward and drop the vertical slide bar. This keeps the hogs out of the trough till the feed is all ready for them. Then raise the slide bar, the panel will swing back and the hogs can eat.

A PENNSYLVANIA farmer made the trellises in his vineyard pest-proof by constructing them entirely of concrete posts and wire.

AN OKLAHOMA man irrigates his land with the waste water from a swimming tank used by the city people of Chickasha. May have some fertilizing value too.

A NORTH CAROLINA man counts out 112 ears of corn for a bushel. Probably no method of measuring corn is more inaccurate; but just as a means of finding out the average sizes of ears in different parts of the country, let's hear the number in your section.

A CALIFORNIA reader has been troubled with flooded fields. "Now that things have dried up," says he, "we are plowing twenty-four hours a day with a tractor plow." This is an advantage in motor-driven machinery which is often overlooked. It never tires out.

MR. SID JONES of Oklahoma made a silo pit 100x16x10 feet and got good silage out of it. He dug it with road scrapers and teams. It was filled and tramped with teams. Only about two inches spoiled. The oldest silos in the world were pit silos, but most of them have been abandoned for the above-the-ground structure.

How Much Hay in Stack?

By Frank W. Orr

ALFALFA coming along, three or four crops in a season, has boosted the haystack into greater prominence. So, too, the improved stack covers now on the market make the stack the most economical means of housing hay.

When our stack is built and settled we like to know its tonnage before baling, selling, or feeding.

The shape of the stack, variety of hay, and maturity of grass when cut all bear on the question of tons contained in stacked hay.

Where large quantities of alfalfa or other hay are stacked to be held some months before marketing or feeding, the rectangular stack is the most economical to build. Where metal or other effective covers are used, this form of stack can be lengthened as desired without injury from weathering.

Mr. W. J. Spillman of the U. S. D. A. has formulated the rules here given for finding the contents of haystacks. Usually the error will not be over four per cent by this plan of reckoning.

For a rectangular stack subtract the width from the distance "over"—the measurement from the ground up to the peak of the stack and down to ground on opposite side. Next, divide this result by the height, then multiply successively by the "over," the width, the length, and by 0.225. The result will be the cubic feet if the measurements are taken in feet.

For a round stack multiply the greatest diameter by itself, then by the height, and divide the result by 0.25. If the measurements are taken in feet the result will be in cubic feet.

To find the tonnage from the cubic feet, for the first twenty days after stacking, estimate 512 cubic feet per ton; next forty days, 422 cubic feet; and thereafter, 380 cubic feet.

The height of the stack will cause considerable variation in the weight of a cubic foot, particularly at the bottom of the stack.

The tall, narrow stack may be equal in cubic feet to a low, narrow-pointed stack yet the actual contents will vary widely.

In Several States

COUNTY AGENT TUCKER, of Stephens County, Oklahoma, is authority for the statement that J. R. Tucker of that county dug a pit silo holding twenty tons at an actual outlay of $5.25.

DR. FREDERICK HAYNES NEWELL has been appointed head of the Department of Civil Engineering at the University of Illinois. Doctor Newell is the real creator of the Reclamation Service, and one of the most eminent engineers of the country.

THE Allegan County (Michigan) Cow-Testing Association claims championship of the United States for butterfat per cow as shown by the record of any such organization. The average per cow per year on last year's showing is 301.3 pounds.

WHEAT silage is a surprising expression to Eastern farmers. But in Washington, where corn is not a very good crop and wheat grows very rank, from 10 to 20 tons to the acre of excellent silage is made by sowing vetch and wheat together in the fall.

A WRITER in "Hoard's Dairyman" says he cured a cow addicted to sucking herself, by passing a stick five feet long between her fore legs, and fastening the front end to a ring in her halter and the other to surcingle just back of her front legs. The ends fasten by snaps to rings. Ever try it?

WILLIAMS of Arizona recommends for hogs the following mixture to serve as a tonic and cure them of gnawing bones, chewing stones, and other eccentricities of depraved appetite: Charcoal, 8 pounds; air-slaked lime, 8 pounds; common salt, 6 pounds; hardwood ashes, 8 pounds; powdered sulphur, 4 pounds; powdered blue stone, 2 pounds.

Sold Butter of Quality

By John R. Colter

A BUTTER producer in Mount Jackson, Virginia, allowed his name to be quoted on the Washington, D. C., Food Products Bulletin which the post-office authorities of that city issue, and within a few days had received three inquiries for prices. They were from housewives.

Immediately he replied to the inquiries, quoting a price of 27 cents the pound for butter—the customer to pay the postage. This in spite of the fact that he knew several of the fancy groceries of the national capital were asking 38 cents a pound. He received a few trial orders, packed the butter neatly, and shipped it promptly back. A worthwhile trade grew up. He received orders for 50 pounds in a single week, and of course followed his customers up with offers of other kinds of fresh produce. A prominent Southern hotel added its patronage to the Washington housewives—and the producer found to his surprise one week that he had so many orders that he would have to buy cream from his neighbors to satisfy the demand.

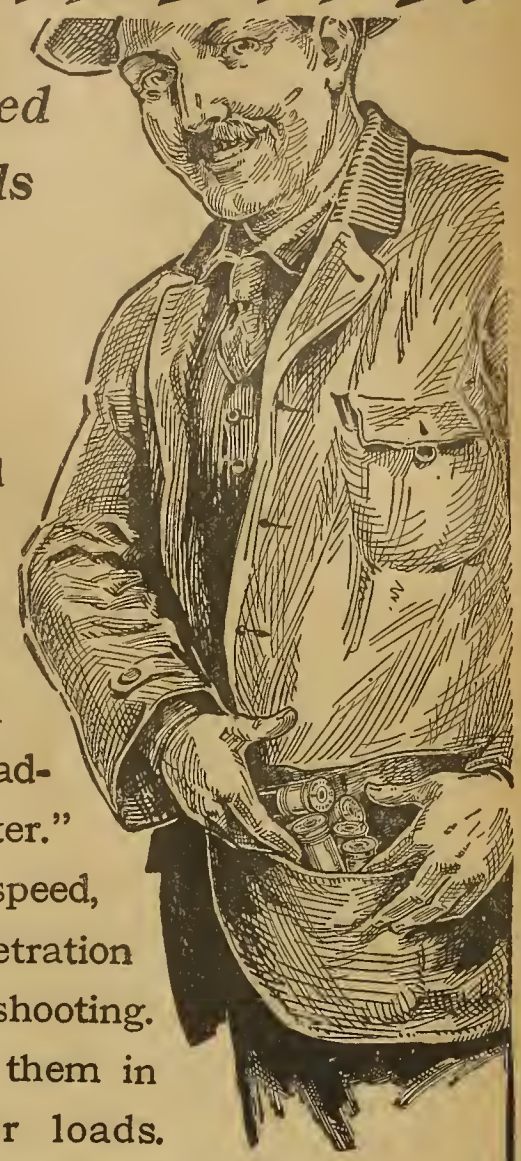
At this point he might have fallen down if he had not taken thought. But he did. He examined every quart of bought cream with a careful scrutiny, and turned back a good deal that was not up to the mark.

"Of the hundreds of pounds of butter that I sold," he wrote the postmaster at Washington, "I have never had a dissatisfied customer. I kept the bars of high quality up."

Who Can Answer?

HOW much more feed can be obtained from a corn crop by putting it in the silo than by utilizing it in other ways? Does the silo pay—not some other man, but you?

WINCHESTER



Factory Loaded Shotgun Shells "LEADER" and "REPEATER"

If you want to fill your game bag, first fill your pockets with Winchester factory loaded shotgun shells "Leader" and "Repeater." They have the speed, pattern and penetration essential for good shooting. All dealers keep them in the most popular loads. Be sure to see that every box you buy bears the big W

THE GRAND PRIX, the highest honor, was awarded Winchester Guns and Ammunition at the Panama Exposition.

Trade Mark

MAKE YOUR BIKE A MOTORCYCLE at a small cost by using our Attachable outfit. FITS ANY BICYCLE. Easily attached. No special tools required. Write today for bargain list and free book describing the SHAW Bicycle Motor Attachment. Motorcycles, all makes, new and second-hand, $35 and up.

FREE BOOK

SHAW MANUFACTURING CO. Dept. 47 Galesburg, Kansas.

Runs on Alcohol at cost of less than 1-2 cent an hour anywhere without electricity, springs or batteries. Superb construction. 12-inch blades. Adjustable roller bearing. Reliable. A proved comfort. Prompt delivery. Keep Cool

Write for prices and free circular

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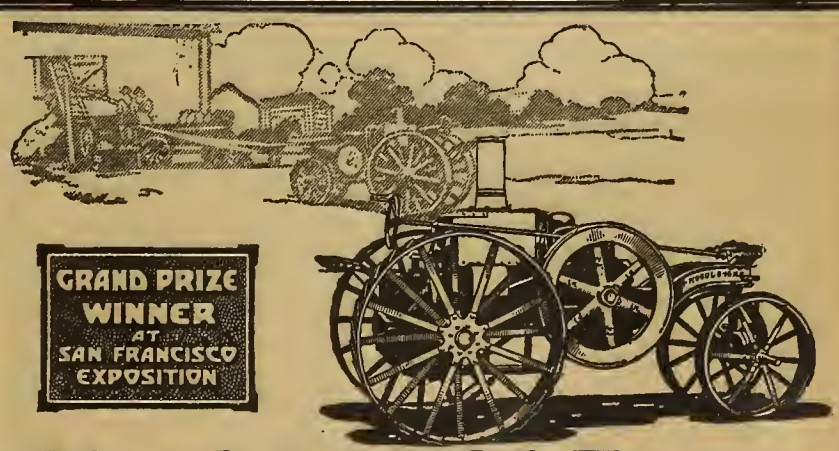


Mogul 8-16 Oil Tractor $675.00 Cash f. o. b. Chicago

THE small-farm tractor is here to stay. Farms even smaller than 100 acres are rapidly being equipped with Mogul 8-16 oil tractors. Since their introduction, the great plant at Chicago has been turning out these machines by the thousands and is still behind orders.

There is only one reason for this unprecedented demand. Tractor farming pays. Horse boarders are cut down to the small number required for cultivating and the few other jobs for which tractors cannot be used. The plowing, disking, seeding and harvesting are finished without relation to the effect of weather on horses. Costs are reduced all 'round. Net farm profits are higher. Tractor farming pays well on small farms when the work is done with a Mogul 8-16. The longer you put off buying one, the more money you lose.

The Mogul and Titan lines include larger tractors to 30-60 H. P., all operating on low grade oil fuel, and a full line of general purpose oil engines, from 1 to 50-H. P. in size. See the local dealer who handles these machines or write us for full information.

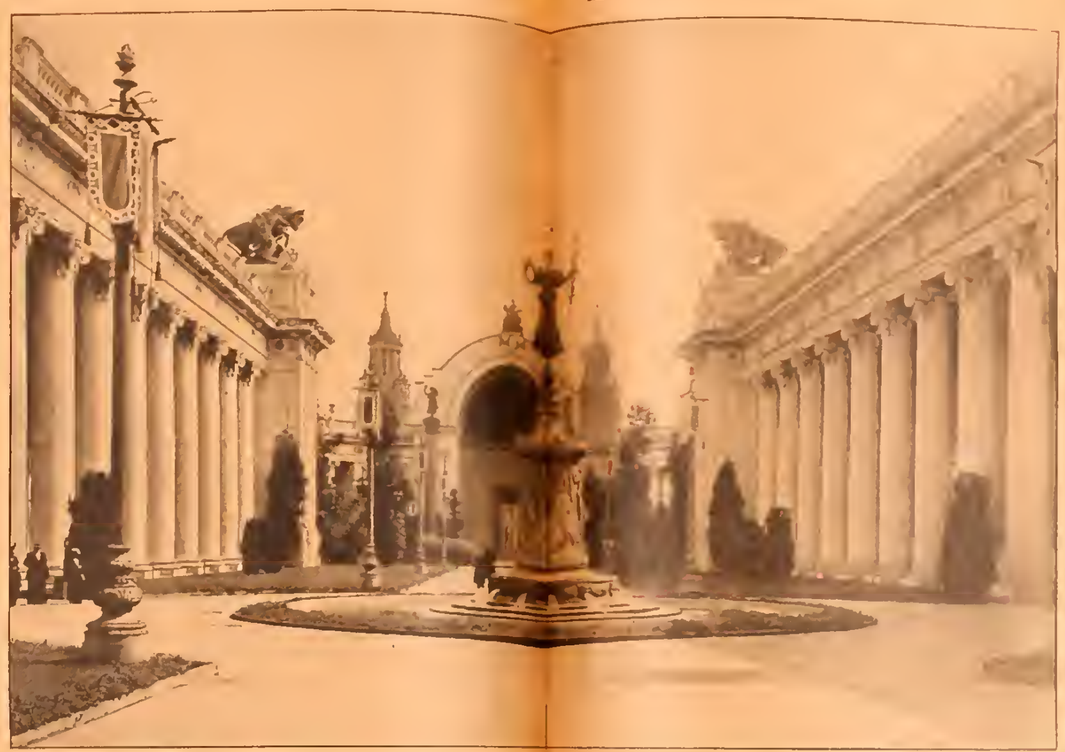
International Harvester Company of America (Incorporated)

CHICAGO USA

Champion Deering McCormick Milwaukee Osborne Plano

Presenting Farm Products at the Big Exposition

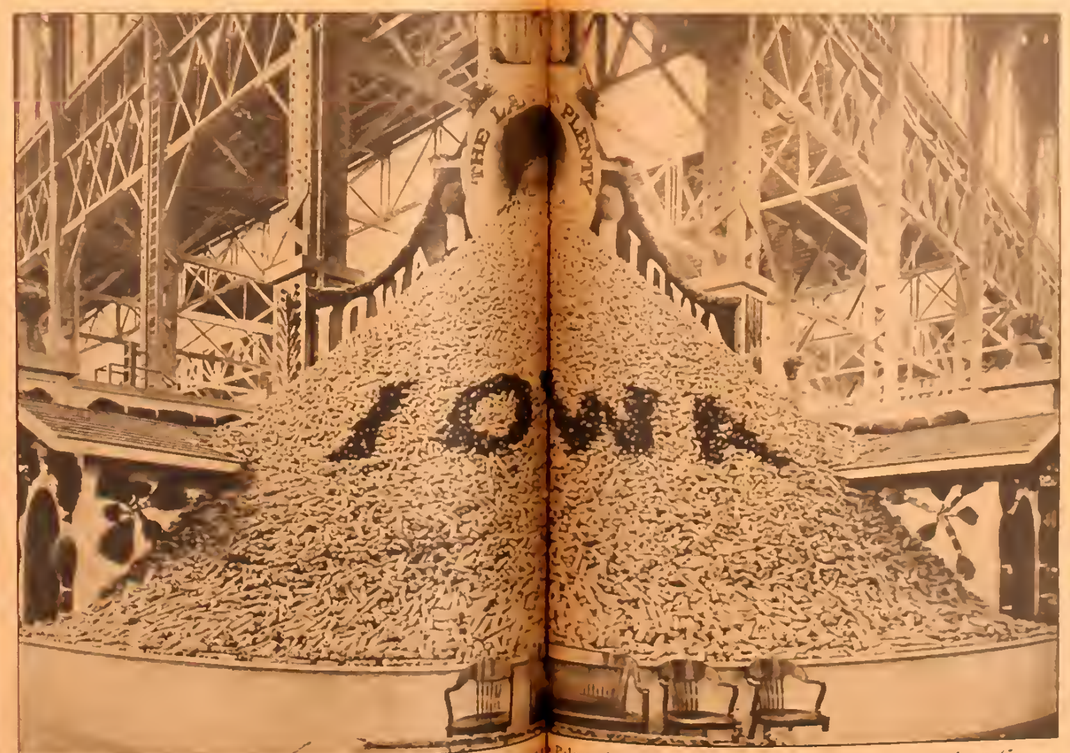
A cheese weighing 11,000 pounds is the unique exhibit of New York State in the Palace of Food Products at the great Exposition at San Francisco. The cheese is the largest one ever made



The Court of the Four Seasons is located appropriately in that part of the Panama-Pacific International Exposition at San Francisco which is devoted to things agricultural. The agricultural section of the big Exposition is the most popular place with the farmers and many city dwellers. The building shown at right of the Court of the Four Seasons is the Palace of Food Products. The structure pictured at left of court is the Palace of Agriculture

The products of the different States [illegible] are shown in the displays in the Palace of Agriculture. The exhibits of Massachusetts and of Louisiana are shown in the [illegible] view of the palace

These milk cows, shown at the Exposition by a milk-condensing company, are valued from $150 to $1,500 a head. They are housed under modern conditions, and are milked by milking machines



An unusual exhibit of corn is shown in the Iowa section at the Exposition [illegible] Palace of Agriculture. The display, which contains a cone of corn 65 feet in diameter at the base and 45 feet high, attracts much attention [illegible] many throngs of sightseers. The interior of the cone is hollow, and is used for exhibits of grains and grasses grown in Iowa. The [illegible] State of Iowa is in the central part of the Palace of Agriculture

Agriculture in the Philippine Islands, a most interesting display, is shown in this section of the Palace of Agriculture. The exhibit shows the agricultural possibilities of the Philippine Islands

FARM and FIRESIDE

THE NATIONAL FARM PAPER

Published every other Saturday by
The Crowell Publishing Company
Springfield, Ohio

Branch Offices: 381 Fourth Avenue, New York City; Tribune Building, Chicago.

Entered at the Post-Office at Springfield, Ohio, as Second-Class Mail Matter.

Subscription Price

One year (26 numbers), fifty cents. Three years, one dollar. Extra postage for Canada, twenty-five cents per year.

About Advertising

Farm and Fireside guarantees that its advertisers are responsible and honest people, and that its subscribers will receive fair and square treatment.

Advertising rates and regulations furnished upon request.

HERBERT QUICK, - - - - - - - Editor

August 14, 1915

The Crisis With Germany

ON JULY 23d President Wilson, through Secretary Lansing, sent to Germany his third, and perhaps his last, note on the destruction of the lives of our citizens—men, women, and children—on the unarmed passenger vessel, the Lusitania.

This note brings the crisis to a point which makes it necessary for Germany to conform to the recognized laws of nations or break off our friendly relations.

This does not necessarily mean war, even if Germany refuses to yield; but it does mean a very critical situation.

The President refuses to bargain with Germany as to things which are ours by right. The note tells Germany that we shall continue to contend for the freedom of the seas, "from whatever quarter violated, without compromise, and at any cost." Thus it implies that we shall hold Great Britain as well as Germany to an observance of international law, but we refuse to mingle the two controversies while treating with either.

The note is a very solemn and firm one. It does not yield an inch. And it closes with these momentous words: "Friendship itself prompts the Government of the United States to say to the Imperial Government that repetition by the commanders of German naval vessels of acts in contravention of those rights must be regarded by the Government of the United States, when they affect American citizens, as deliberately unfriendly."

No firmer or stronger note ever emanated from our State Department. It is not an ultimatum, but it becomes an ultimatum the moment another American life is lost in the German submarine warfare on merchant ships, unless the attack is preceded by a visit and search to determine whether or not the ship carries contraband of war, if it is a neutral vessel; or until after the passengers and crew have been given a chance to save themselves, if it is an unarmed vessel flying a belligerent flag.

In the note the President calls attention to the fact that for several weeks the German submarines have carried on their warfare legally, and suggests that they can continue to do so if they care to remain friendly to this nation.

The British "Blockade"

THE affair with Great Britain because of her interference with our commerce is not so serious as that with Germany, because she has not killed any of our people; but her illegal actions have brought about what may almost be called the "British Crisis."

She has held up in meats alone more than $14,000,000 in American goods, and the manner in which she has done it is quite as illegal as the destruction of the Lusitania. The cotton trade also is hanging in the balance on account of the stoppage of trade, not only with Germany, Austria-Hungary, and Turkey, but with such neutral nations as Holland, Denmark, Sweden, and Norway.

A nation at war with another has a right to blockade enemy ports. She has a right even to stop goods going to neutral ports if they are destined to the enemy. But she has no right to do so except by a legal blockade, defined in its limits, and practically, as well as theoretically, shutting up the ports.

The long-distance "blockade" of Germany is not a legal blockade.

Great Britain by her interference with our commerce is not only piling up claims against herself, but is putting a strain on the friendship between the nations.

These things give us glimpses only of the tremendous tasks thrown on our President and his advisers by the present war.

Moving Pictures for Schools

TRAVEL is better than books; and moving pictures bring the benefits of travel into the smallest village.

Moving pictures, if we could have them in the rural schools, would be of great benefit to all of us if they were of the right sort, and they might be made to save the children a great deal of textbook work, which is dry and uninteresting. The time thus saved could be devoted to better things.

The problem of getting a perfect light for moving pictures has stood in the way of this innovation, but the work of Prof. E. S. Richardson of Louisiana seems to show us the way to solve that. He and his assistants have worked out a plan by which the engine of an automobile runs a generator for the making of the electric light which is said to work perfectly. The automobile is found everywhere. The moving-picture outfit is not beyond the reach of most school districts as to expense.

The rural schoolhouse, especially the larger building of the consolidated district, will soon become the local theater in thousands of cases.

Who Feeds the World?

WHEAT is not undisputed king, nor cotton either. The egg crop last year was worth about $700,000,000 according to the Newark "News."

The bulk of the poultry is produced mainly by the work of women and children. The supply from the specialized poultry farms is small compared to that from the farms where women care for the fowls and children gather the eggs.

The hand that rocks the cradle is the hand that does its full share in feeding the world.

More Than Half the Herd

IT IS a common saying that "the bull is half the herd." But he is much more than half, because he constitutes a half that can be changed at will. The cows, the hens, the ewes, the mares, and the sows are on our hands. To change them for others is expensive. It requires a complete readjustment of things. It is a hard thing to do.

But the male side of the house is embodied in one animal. He can be disposed of easily, and a better one usually obtained at a reasonable expense.

As Fraser of Ohio says, each cow in a herd of forty represents one eightieth of the milk capacity transmitted to the calves in the herd. The bull represents one half—is forty times as important as any one cow. But a succession of pure-bred sires of the best strains soon become vastly more than half. The first and second make three fourths; the first, second, and third make seven eighths; the first, second, third, and fourth make fifteen sixteenths of the herd. Thus, only four animals in succession on the male side give a herd or a flock of splendid quality from a start of scrubs.

If we all realized this as we should, the day of the scrub or grade sire would soon be over.

A Load of Hay

By J. B. Weaver

HARD-PAVED streets and hurrying feet,
Where it's only a nod when old friends meet,
Rattle of cart and shriek of horn,
Smiling Youth and Age forlorn,
Bound for my office I speed away,
When my auto brushes—a load of hay.

Chauffeur curses I scarcely hear,
For things I loved as a boy seem near:
Scent of meadows at early morn,
Miles of waving fields of corn,
Lowing cattle and colts at play—
Long have I wandered another way!

Hark, the bell as it calls the noon!
Boy at his chores, hear him whistle a tune!
Barn doors creaking on rusty locks,
Rattle of corn in the old feed box,
Answering nicker at toss of hay—
Old sweet sounds of a far-off day!

There! My driver stops with a jerk,
Then far aloft to the scene of my work;
But all day long, midst the city's roar,
My heart is the heart of a boy once more,
My feet in old-time fields astray—
Lured by the scent from a load of hay.

Right Kind of Knowing

SOME of us expect the county agent to know the answer to any farm question put to him.

Farming is not so easy as that. Nobody knows the answer in many cases, and in many more there is need for investigation.

"What's the matter with my wheat?" "What is this trouble with the peach trees?" "What is this weed, and how can I get rid of it?" Such questions as these cannot always be answered offhand by the specialist in any particular field; and these three questions relate to three great fields of study and experience—field crops, orchardry, and agricultural botany.

What does the reading farmer do in such a case if there is no county agent? He "looks it up." He has limited facilities for looking it up, and therefore he asks his neighbors if they know anything about it. After a while the real facts get about the countryside, but perhaps it is too late to do just what ought to have been done in the first place.

The county agent is often the man who knows; but he is pre-eminently the man who looks it up for us. Beware the man who knows right off the bat. Trust the man who looks it up.

Our Letter Box

Poisons the Worms

FARM AND FIRESIDE: I have read with interest the gapeworm experiences of FARM AND FIRESIDE readers. Here is my remedy, which I have never known to fail:

Sprinkle a little London purple powder in the feathers of the mother hens after they are settled for the night, and the gape trouble will be over. If the chicks are weaned, or are being brooded without hens, sprinkle a very little of the London purple on the chicks at night. Do not feed the chicks where the London purple has been used, or they will get enough of the poison to kill them.

HESTER KAHO, Indiana.

EDITORIAL NOTE—London purple, like Paris green, is a deadly poison. It must therefore be used with great caution. Evidently enough of the poisonous powder is inhaled by the chicks to kill the gapeworms without seriously harming the chicks. No great risk is taken in thus dosing gapey chicks. If not cured they are better killed than allowed to die by inches.

Says Germans are Temperate

FARM AND FIRESIDE: In the July 3d issue there appears an article on page 4 by John Coleman. Mr. Coleman makes the assertion, "and that about the rarest thing in American life is a German prohibitionist."

As a German-American citizen I take exception to that statement, and consider it a flagrant insult to myself and fellow countrymen.

I am a teetotaler myself, as are also my father and brother. I am acquainted with many Germans in all walks of life, and a great many of them are strictly temperate. And what is more, a great many drinking Germans will and do vote local option and prohibition tickets.

I am somewhat surprised that the editors would allow that statement to get by. CHAS. F. GRAFF, Michigan.

Land-Rich and Money-Poor

DEAR EDITOR: Soon after I married we settled on a 100-acre farm with buildings all in bad shape. As all my funds were invested in the farm which was then valued at $1,000, I was compelled to go into debt for tools and team, which put us several hundred dollars behind.

Fortune favored us, however, as I invented a simple device for hulling peanuts for seed purposes. I find that patents don't protect unless you have lots of money to prosecute offenders.

My farm would now sell for $4,000, but still I am hardly able to keep the wolf from the door. All the funds I have been able to obtain are in the farm and its improvement.

W. T. GLOVER, Virginia.

The Hired Man's Side

FARM AND FIRESIDE: I have been reading your paper for some time, and find that you stand by the laboring class of hired hands on the farm. I have a few words I would like to know concerning the hired man.

What will the farmers do in a few years? They are getting so they class the hired men as animals. If they would give the hired man a little chance they wouldn't be so hard up for help. In 1912 I was out through Iowa, Nebraska, and in the Dakotas, where they said that men were needed. Find work I couldn't, and the farmers didn't want to associate with us laboring hands. I couldn't even buy or beg a meal from the farmers. As luck had it, I had money to carry me through, but the farmers wouldn't even sell a meal.

I worked for a farmer that wanted his men to be in the field by 5 A. M. and not stop a minute. If we went to town we had to go at night, and it was ten miles. We offered to work late so as to get off early on Saturday night, but he wouldn't hear to that. Now what is a man to do in a case like that? W. L. MCKEE, Ohio.

Our Mistake

FARM AND FIRESIDE: In the issue of FARM AND FIRESIDE for July 3d you published a contribution of mine entitled "How to Make Troughs."

Permit me to call your attention to the legend which appeared under the illustration accompanying this article—namely, that a trough such as illustrated could be made for $10. This is not in accordance with the text, the intent of which was to show how much could be done with $1 expended perhaps only for cement, it being presumed that the necessary reinforcing material could be picked up around home. H. COLIN CAMPBELL.

Live Stock—Dairy

Pigs That Get Fat

ANY pigs dying of "thumps"? That's because they are too fat and take too little exercise.

They are too fat because their dam gives them lots of rich milk. When they begin to get those cute rolls of fat over their shoulders, look out! Especially if they lie about in the nest all day enjoying themselves piggishly.

Cut down the sow's ration in time to prevent this by making her shrink in her milk.

Make the little fellows exercise by hustling them about the yards with a broom, or taking them away from the nest and making them find their way back.

Picking Good Feeders

THESE are the kind of calves that with proper feed and handling grow into the prime fat beef that is selling around $10 the hundredweight at the big cattle centers of the United States.

The shape of the head of a calf is a good indicator as to its feeding qualities.

Safe signs: Head short, forehead wide, eyes bright, large muzzle

If the head is short, wide between the eyes, has a large muzzle, and large bright eyes, it is called a good feeding head.

"Let me see a steer's head through a blanket and I'll tell you what is on the other side of the blanket," a cattle feeder of many years' experience remarked recently. "That's how strong I believe in this head conformation and expression business."

Keep Your Best Cows

HIGH grain prices have not done the dairy business any good so far. E. A. Wendt of Maryland voices the feeling of a good many when he says:

The smaller returns from milk at this time, owing to higher feed prices and the lessened demand because of so many unemployed, have caused many farmers to dispose of their milch cows. Many others are tempted to stop producing milk and produce more grain to be marketed as grain instead of as milk products.

The tempting grain prices exert a powerful influence in this direction. Assuredly this is no time to waste high-priced feeds on animals that would be unprofitable even under normal conditions.

Never has it been more important to weigh and test the output of each milch cow and to weed out the unprofitable. But will it pay to sacrifice animals that would be profitable if markets were undisturbed and prices regular?

To do this means the same thing as taking a "flier" in speculative stocks, or placing money with the "bookies," or any ordinary betting.

Grain may drop at any time, and when it does, feeds will follow; while milch cows will boom for a time, and then come back to normal. Those who have sold will be buying to start another herd, and will have to pay above normal because of the demand for cows.

If we were sure present conditions would continue for a term of years, a policy of selling cows and raising grain might be justified. But the risk is too great. The change may come before a single crop of grain can be marketed.

Why not weed out the animals that would be unprofitable if markets were the same as a year ago? By that time it may be more easy to decide. Pasture will relieve the strain and give more time to think it over.

Mr. Wendt's observations are perhaps limited, but what he says calls to our attention the value of the good cows.

When Calf Cholera Comes

By J. C. Lampman

WHITE SCOURS, or calf cholera, comes on so soon after birth that often the calves are dead before they are considered to be seriously sick.

This disease usually appears within two or three days after the calf is dropped. Seldom have I known of any cases developing after the calf is two or three months old.

The symptoms are usually failure to eat, the calf lying down much of the time, the eyes grow dull, and a peculiar pasty white excretion is noticeable. The calf often dies within twenty-four hours. Only immediate attention will save it.

The disease is usually contracted by infection through the navel cord. Prevention is better than cure.

The cow, during the period of calving, should be kept in a clean, freshly bedded box stall or enclosure. As soon as the calf is dropped disinfect its navel cord with a mixture of one part carbolic acid to ten parts of water. Also soak a string in the carbolic-acid mixture, tie firmly around the navel cord two or three inches from the calf's body; then give the calves showing any appearance of white scours two tablespoonfuls of castor oil every hour until better; also a teaspoonful of equal parts of pepsin and bismuth every hour, day and night, until the calves are much improved.

Do not give the affected calves any milk, but give one or two raw eggs three times a day. When so improved as to appear hungry, give a little gruel made by mixing one cup of oatmeal in two quarts of water, boil two hours in double boiler, strain through potato sieve, salt lightly, and add two tablespoonfuls of lime water.

Feed gruel through a bottle nipple and gradually add a little milk to the mixture until the calf becomes normal again. The gruel should be fed as warm as the calf will drink it.

The veterinarian will say to vaccinate for this white scours trouble. Well and good, but many a grade calf is not worth a veterinarian's trip, and many calves will be dead before the veterinarian can be secured.

A medicine chest in the farmer's barn is as necessary as the insurance on his buildings.

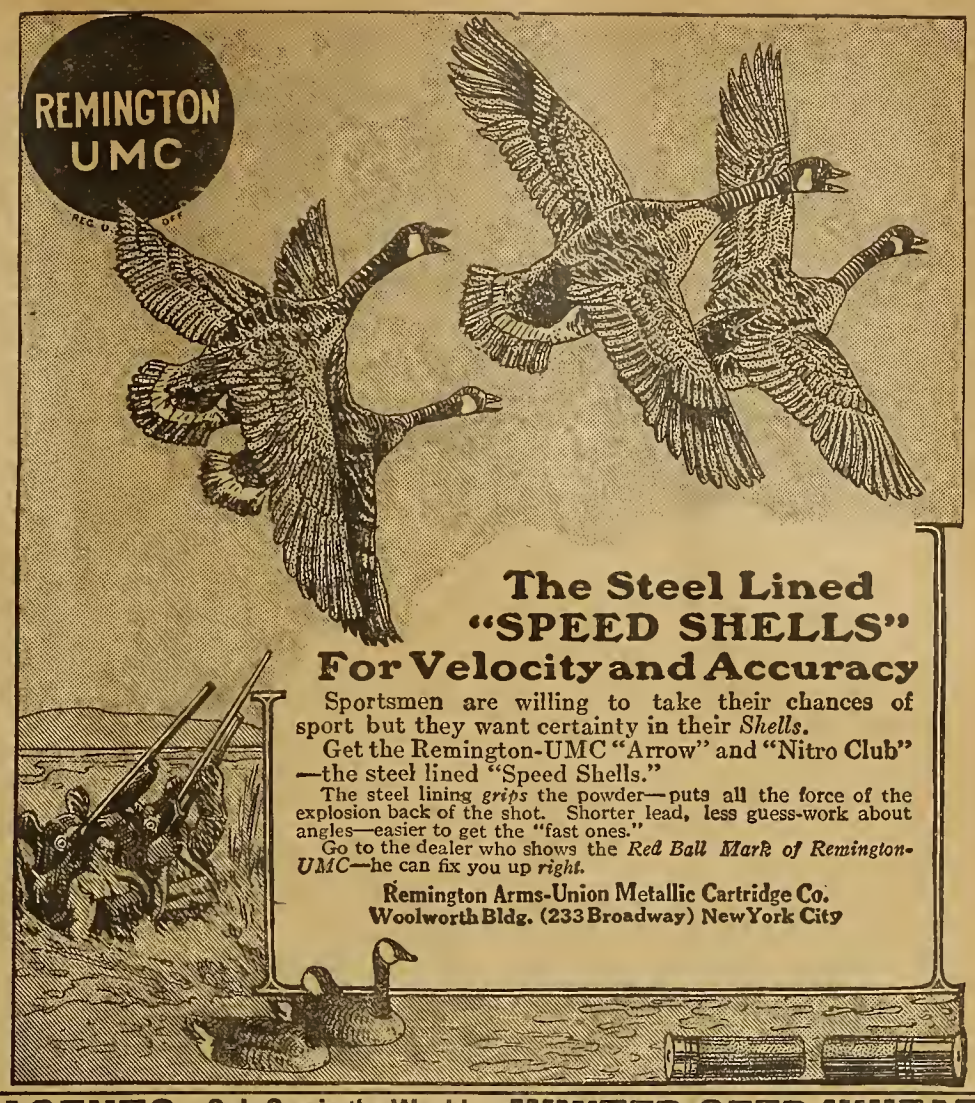
SHEBOYGAN COUNTY, Wisconsin, has one cheese factory for every thirty-two farmers.

A WISCONSIN dairy expert points out that, the country over, dairy farmers own the farms they work to a greater degree than most other farmers.

ONE Wisconsin creamery sold 25,000 pounds of buttermilk cheese last winter. It is like cottage cheese except that it's made from buttermilk according to a method discovered by a Wisconsin professor.

THE board bill of the 800 dairy show animals quarantined for two months at the Union Stock Yards stables because of foot-and-mouth disease was $40,000. The bill was paid under protest, and the protest still continues.

ACCORDING to the Nebraska experts it takes five cents' worth of corn to make a pound of pork, counting feed alone, with corn at 60 cents a bushel. Then is the time to study the matter of furnishing oil meal, cold pressed cottonseed meal, or tankage to save feeding an excess of corn to get a little protein.



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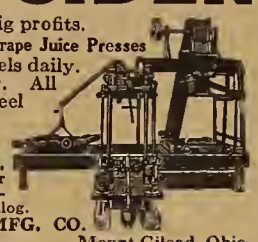

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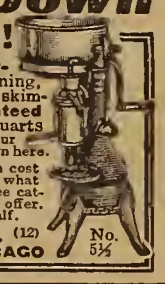

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Big Value in Alfalfa

SOME idea of the alfalfa operations in California can be gained from the picture, which was taken in the south central part of the State near Fresno. The climate favors large yields, which have to be handled on a large scale. In fact, the average size of the farms in Fresno County is a little over 175 acres.

And though California is best known for orchard products, yet her alfalfa crop is officially valued at about thirty-five million dollars.

Large yields of alfalfa are handled profitably in a large way

White-Bellied Wheat

By John Coleman

EVERY wheat-growing farmer has noticed that there is an occasional grain of wheat which is different from the rest in being whitish yellow or, as it is called in some sections, "white-bellied."

Take up a kernel of good wheat. Hold up to the light, and note how the sun shines through it as through a little clear stone. It is translucent. Some people call this appearance "glassy," scientists term it "corneous." It is the proper color and translucency of good wheat.

If you search you may find kernels which are spotted, mottled, or even all yellowish. Hold these up to the light and you will observe that they do not let the light through like an egg, but are opaque like a bit of brick.

Some of you may find that half, or even more, of your wheat kernels are of this sort. Some of them look like normal kernels unless they are held up to the light as an egg is held in candling. In fact, this trouble in wheat is detected in the same manner as a bad egg.

Crush one of the opaque, spotted, or white-bellied kernels and it will be found to be starchy or mealy inside. Instead of breaking into bits of a horny appearance it will go to dust between the teeth. Where the kernel is spotted, the parts under the spot are brittle, friable, and starchy, while the rest is firm.

Such wheat does not grade as high as normal wheat. It lacks nitrogen, and has not as much food value as the corneous wheat. Millers complain about it, and wheat growers suffer in lower price. The trouble is not well enough understood to make its way into price quotations, but the loss in price is there, the farmer may be sure.

It is not a disease, and the flour from the white-bellied wheat is perfectly good for food but it is not as good as that made from the honest glassy-looking wheat we all know so well. This trouble is not a peculiarity of any variety of wheat, but is common to all varieties of which there is any record, when grown under the conditions which cause "white belly."

It has remained for Prof. Wm. P. Headden of the Colorado Experiment Station to tell us about its cause. He finds that it arises from there being too much potash in the soil for the nitrogen, or too little nitrogen for the potash—either way you like to state it. Even if the amount of nitrogen is sufficient, white-bellied kernels will appear in the wheat if there is too much potash. It can be cured by adding nitrogen even when there is nitrogen enough already for ordinary purposes.

The trouble is not caused by poor soil, for Headden had lots of the yellow berries in wheat that yielded from 29 to 52 bushels to the acre. The trouble was not poor soil, but arose from the potash and nitrogen being out of balance. He got the same results from Defiance, Red Fife, and Kubanka.

The remedy? It is to add nitrogen to the soil. This can be done by sowing nitrates, and under Eastern conditions, wherever the trouble appears, this would seem to be the obvious way. Where fertilizers are used the potash may be left out and the nitrates increased. Everywhere the plowing down of a legume crop ought either cure the trouble or help it. That is the suggested remedy in the clover regions. Under Colorado conditions summer fallowing will make available the nitrates in the soil, and give not only a better wheat yield but less of the yellow berry or white belly, or perhaps none at all.

Thresher Explosions

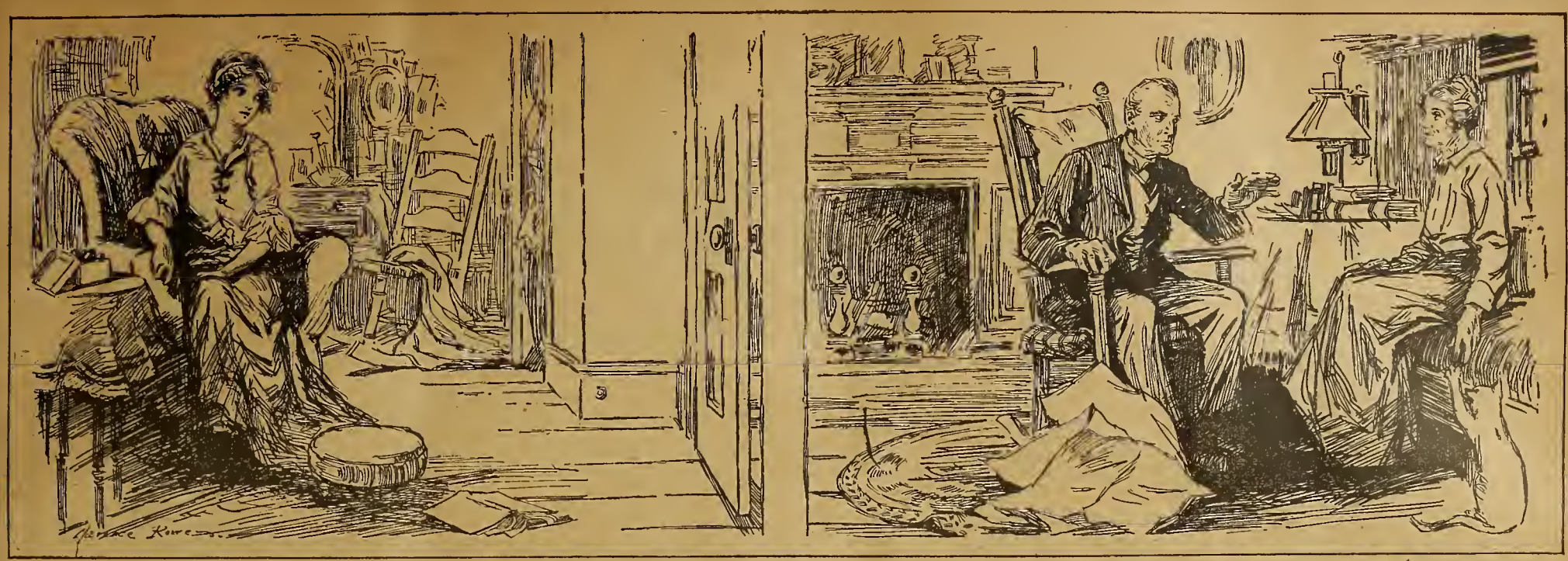
NEARLY three hundred threshing outfits were destroyed by mysterious fires in the Northwestern States last year.

This is a very serious matter, and is well worthy of the study which has been given to it by the U. S. D. A. The investigators have made up their minds that these fires are caused by the ignition of dust in the air. Where fine combustible dust is confined in closed rooms like flouring mills, such catching fire sometimes causes explosions quite as destructive as though the bursting charge were gunpowder instead of flour. How does the dust take fire about the threshers? Probably it catches from electric sparks from the machinery. A broad belt running on a big pulley will become so electrified that it will send off sparks to the finger held near it. If the belt of a thresher slips, the friction will generate a heavy enough charge of electricity to set fire to the dust in the air when discharged through it.

The U. S. D. A. recommends that all cylinder shafts be grounded through a dry brush contact and a wire from the brush to an iron rod driven down to wet earth.

This simple device may save not only property but life.

E



Judith sat upright. The door was ajar. Her father was saying: "Has she done anything but sit round since she got through high school? Tell me that"

How Judith Cured Herself

A Harvest-Time Story of Misunderstanding, Love and Energy

By ANNIE HAMILTON DONNELL

"WE CAN'T throw her away, Mother,—"

"Remington Swift—*Father!*" With a horrified face the small figure on the couch bounced upright. "What are you talking about? You scare me! Did you think I was complaining of Judy—of my own little girl? I only said—"

"You only said she was an ambitionless little piece, or words to that effect. Lie back, lie back, woman dear. You only told the truth." He was gently pushing her back. "I guess we're all pretty well acquainted with Judy, in this family. Heaven knows how soon outsiders will find her out. But, as I said when you interrupted, we can't throw her away—"

"Father, don't! You hurt."

"Well, she hurts." Remington Swift's pleasant face faintly shadowed. "Maybe you didn't think, Mother, that anybody worried about Judith Swift but you. It seems a bit hard—the other children have been so chock-full of ambition. Look at Rem junior's college marks, will you? That boy will graduate at the head of his class. And Professor Ernst tells me Josephine is doing actual wonders with her voice—just by clear determination to 'get there'."

"Well, Josie did have the voice to begin with, dear. We can't blame Judy for not trying to be a singer. If she only took to—oh, took to anything! Father, I'd be willing to see that child a lawyer or a doctor, old-fashioned as I am about 'woman's sphere'. And she's our last-born. To think we should be sitting here, groaning over our baby! I was so proud because she learned to talk so early—she *did* learn to talk *remarkably* quick, Father."

Father hurst into relieving laughter.

"Oh, Judy's always been a smart talker!" he said, not untenderly.

The little room was full of late spring sunshine. To the elderly couple in it, its rather worn and faded appearance stood for the comfort and the dearness of long acquaintance. They wanted it just as it was—soft, faded colors, deep-dented, friendly old chairs, even the familiar ink blot on the rug. This was home.

"Maybe it's Judy's ears, Father," Mary Swift took up the Judy topic once more.

"Hey? Judy's what?"

"Ears—why not? I've been wondering if it could be. Perhaps ambitions and ears are connected somehow. Nobody can tell."

"What's the matter with Judy's ears? I thought you'd always been proud of 'em because they 'buttoned back' so beautifully."

Mother sighed.

"Oh, Father, what a man creature you are! Actually I believe you've forgotten that ever since that sickness of Judy's she's been a little hard of hearing."

"Sho, of course! But I thought you thought—" perplexity sat on the man creature's face. Hadn't Mother been rejoicing over the improvement of those same little buttoned-back ears! Women creatures—

The woman creature was speaking again now: "She *is* better—I've been very much encouraged. Still I've been wondering, Father,—"

"Wonder away, woman dear."

"If it wouldn't be a good plan for Judith to take that course of treatment next winter—you know, Father, that did such wonders for Ellen Woods when she was all run down."

"Judy isn't exactly all run—"

"Judy's hearing isn't just right yet. Don't you go to looking that sort of a Judy look, Father! She's our dear girl."

"Well, if she's our dear girl why doesn't she have a little ambition to get a finger into the world's work pie? *Do* something. Has she done anything but sit round since she got through high school? Tell me that."

"Just sit round," sighed the mother of Judith. "But supposing it's really her ears, Father!"

"Really her fiddlesticks!"

In the next room a girl sat slowly upright in her big easy chair, a curious look on her pretty young face. The door between rooms had noiselessly slipped a little ajar and through that widening little gap—

"They think I'm *deaf!*" thought Judith Swift when out of her pleasant silence of half-asleep she had heard so much! Those two voices had bored into her consciousness and she winced now at the pain. She felt wounded and bleeding.

They were disappointed—Father and Mother were disappointed in her. They were more than that—hurt, discouraged, disgusted. She had heard it all in their voices. And she was their "baby," twenty-one years old. Poor Mother and Father!

"Poor me!" flamed the girl hotly. "They'd like to 'throw me away,' but they can't! They're proud of Jo and Rem junior and they're ashamed of me. I guess I know when voices sound ashamed! Why didn't they say so before? Why did they *let* me 'just sit round'? Am I to blame that I can't sing like an angel or do things smart or splendid—"

Her thoughts flowed out in a hot, rapid stream. This awakening of Judith's was instantaneous, complete. Would she ever drowse again unconscious of her sins of omission? Would she ever be happy again?

Yet they had spoken tenderly, Father and Mother,—an underlying tenderness had run through all their words. Perhaps they loved her after all! Judith's shocked young face burrowed into the pillows of the couch and the flood of tears came in a relieving stream. No one came into the room, and she lay there undisturbed.

Suddenly, as suddenly as her peace had departed, Judith sat up straight on the edge of the couch. She sat up very straight indeed. Flecks of soft color came and went in her cheeks. She spoke aloud.

"Well," said Judith, "what's to be done about me? Am I going to be worthless or worth something? *Have* I any ambition or haven't I? Is there a living thing on earth I can do to get my finger into Father's 'work pie'? Answer me that, Judith Swift! Go ahead and take an inventory of yourself—begin!"

She spread her slender fingers thoughtfully and began to count on them the things she could not do. Ten fingers would never answer!

"Sing—mercy, no! I haven't any more voice than a blue jay! Play on the piano—I couldn't play on the window sill! I couldn't teach or bookkeep or typewrite or cook or paint pictures. Paint pictures! She had a sudden vision of them—the pictures she would paint—hanging on a wall for all the world to criticize. In spite of herself Judith smiled. But she was sober again instantly.

"You don't know how to do a thing, poor dear!" she pitied Judith Swift. "I'd be sorry for you if I wasn't too ashamed o' you. All I can do for you, my dear, is to get you a box of lead pencils and a bunch of shoe lacings and set you out on a street corner. 'Buy, buy my wares, pretty ladies—kind gentlemen! Nice fresh pencils and tender shoestrings!' Oh, bah! I'm disgusted with the likes o' you! Go to bed."

But Judith had begun to think. She lay in the darkness and writhed in the uncomfortable process. The inventory went on mercilessly. She reviewed her two years since graduating in the obscure middle of her class in high school. What had she been doing all that time? M-m-m—well, helping Mother a little bit, keeping comfortable and reading. She *had* read, but a sudden backward revision of the sad jumble of things she had rationed out to her really hungry young mind filled her with disgust. Novels, history, science, Father's farm papers, more novels, more history, more farming lore. Judith uprose in her bed and made audible and scathing remarks to Judith Swift.

"Oh, you needn't pretend you think any of those things while you lay in hammocks and on flowery beds of ease did you any good—don't tell me! Yes, of course, you remember every last thing you read—yes, yes, you stacked away a few ideas on a shelf in your brain (if you have a brain), but what good did that neat little cataloguing and indexing do, please? Oh, lie down—lie down girl! Perhaps in your sleep you'll amount to something."

Remington Swift and his wife, Mary, were first of all father and mother to their two daughters and their one son. After that they devoted their pleasant, rather uneventful days to the system of mild farming inherited from both their ancestors. Plantings and reapings—the taking up and the laying down of their comparatively few acres—were regulated year after year by the rule of old years long gone. Remington Swift's ancestors had been Johns and Benjamins and Cyruses, and with his own ambitiously modern name had crept into his blood no vigorous, "modern" drops. As John Swift and Benjamin and Cyrus had tilled their soil, Remington Swift tilled his, and lived his gentle, happy life a little pinchedly because of the limitations of that soil, but without complaint.

To educate the son and the two daughters was the father's and mother's ambition. To see that education bear fruit in three splendid young lives was all they asked in return. Josephine, the eldest daughter, was to be a singer—she was already well embarked upon the course of study necessary to that end. Remington junior, or, in family parlance, Rem junior, was in his third year of college, fast developing into a scientist. Only Judith still lay a little heavily on the hearts of her parents—Judy, who just sat around. They were honestly puzzled about Judy and her future.

It was the extreme end of September when Remington Swift and his wife, Mary, had their little talk about this daughter of theirs, and when the daughter began her course of thinking. It was a day or two later when the farmer came in from his orchards, rubbing his hands in the way that spelled contentment to the Mary wife.

"You look happy, Father," she looked up from her work to say, "your hands look happy!"

"Well, I do feel set up," he smiled. "The apples are looking fine, Mother. I don't believe there'll be another such crop in Peake County. No, sir! It's going to be a poor apple year almost everywhere. But my Baldwins—Mary, you've got to come and see 'em!"

"Now?—right now?"

"Right now. Get a shawl."

It did not occur to Mary Swift to demur or put off. For twenty-six years she had been ready to go anywhere with Father. She got her shawl and they started out.

"The spraying, Father,—I do believe!" she exclaimed suddenly. "That's why the crop's so fine this year."

"M-m-m—well, maybe." He was slow to agree, mindful of the jolt it had been to him to spray those trees; only the chance to buy a spraying outfit for almost nothing at an auction in an adjoining town had brought about so progressive a proceeding. The lure of auctions was well-nigh irresistible to one with Swift blood in his veins.

"Maybe so," grudgingly admitted Father. "Anyway, you'll see a sight down in the lower orchard."

"Oh, Father, how nice! Just when we need the money for tuitions and shingling the roof, and if Judy takes that ear treatment— Shall you let Al Peters have them as usual?"

"The apples? Of course. Al would go out of business if I didn't sell him my crop. I'll drop him a line. I'm going to be firm with him this time, Mary."

Mary laughed. Her sweet face lifted to Father. "Let me be down here and see you be firm, Father! With *Al!* But he ought really to make a good price this year if it's such a splendid crop. Father, couldn't we build the piazza?"

The Swift apple crop had been so long sold to Al Peters, a personage of Yankee proclivities who bought such crops on the trees for a "lump sum," that any other method of harvesting was not to be thought of. But this year Al would have to look out—Father was going to be firm!

Together Father and Mother wandered happily under the loaded trees. When they went back to the house they had their air castles all under way. Judith saw them coming, swinging hands like children, and the girl's face softened. [CONTINUED ON PAGE 15]

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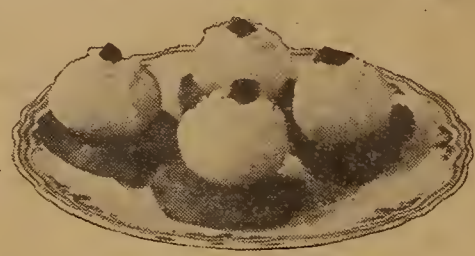
Stuffed Onions and Beets—Boil good-sized onions until very tender and hollow out the centers. Fill with celery that has been boiled and creamed, seasoning to taste, and place on slices of



Onions stuffed with celery

beets. Small dice of the beet may be placed on the top of the cream that fills the onion. W. O. W., Ohio.

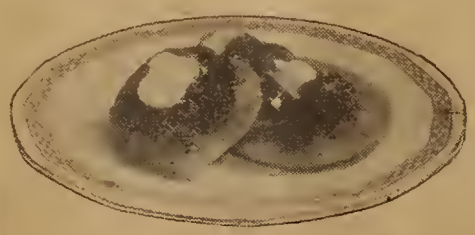
Tomato Aspic Jelly—Soak three tablespoonfuls of granulated gelatin in the same amount of cold water. Put a slice of onion, a stalk of celery, and salt and pepper to taste into two cupfuls of juice strained from boiled tomatoes, and allow all to simmer fifteen minutes. Turn the gelatin into the tomato mixture and stir until it is all dissolved, then strain the jelly through a piece of cheesecloth into small molds that have been rinsed in cold water. This may be used as the foundation for a delicious tomato jelly salad. For the sake of variety, scoop out some of the jelly from the center of the molds and fill the shells so formed with vegetables or flaked fish mixed with mayonnaise dressing. Then melt the jelly you took out and pour it back to fill up the molds. Flaked salmon, chopped beef, chicken or veal, stuffed olives or hard-boiled eggs, all make excellent filling for these salads. Chill on ice, and serve unmolded on beds of lettuce with mayonnaise dressing diluted with whipped cream. A. M. O., Illinois.

Cucumber Jelly—Peel and slice cucumbers, then stew until tender in just enough water to cover, and season with salt and pepper. To every pint of the liquid add a level tablespoonful of granulated gelatin that has been soaked in the same amount of cold water, and stir into the hot cucumber juice until all the gelatin is dissolved. Pour into a wet mold, and when cold set on ice. If desired plain, serve broken into half-inch cubes and piled on beds of lettuce, accompanied by mayonnaise dressing. This is an excellent salad to serve with cold meat. B. B. S., Florida.

Nut Bread—One egg, one cupful of sugar, one cupful of milk, one cupful of nuts, four cupfuls of flour, two teaspoonfuls of baking powder. Mix, and let stand twenty minutes. Bake one hour. F. L. D., Ohio.

Three-Leaf Clover Pastry—One quart of pastry flour, one tablespoonful of sugar, one teaspoonful of salt, one scant cupful of butter, one egg, one-third cupful of water. Rub the butter, salt, and sugar into the flour, beat the egg, and add the water to it. Stir this into flour and butter. Stir this mixture until it is a smooth paste, then put on the board and roll the same as puff paste. Must be rolled three times. When this paste is rolled cut it in pieces about as large as an orange. Roll on board with palm of the hand, making a rope. Twist this into the shape of three-leaf clover. Bake in a buttered tin until brown. When serving fill each leaf with orange jelly tipped with whipped cream.

Tomato Cups—Wash, scald, and peel tomatoes, and when they are thoroughly chilled cut slices off the stem ends and scoop out the seeds. Season whipped cream with salt, a dash of pepper, minced celery, and a bit of horseradish drained from all vinegar, and fill the cups to overflowing. If you have no celery, try substituting sliced stuffed olives, cucumber cubes, or cauliflower. B. B. S., Florida.



Twisted to look like clover leaves

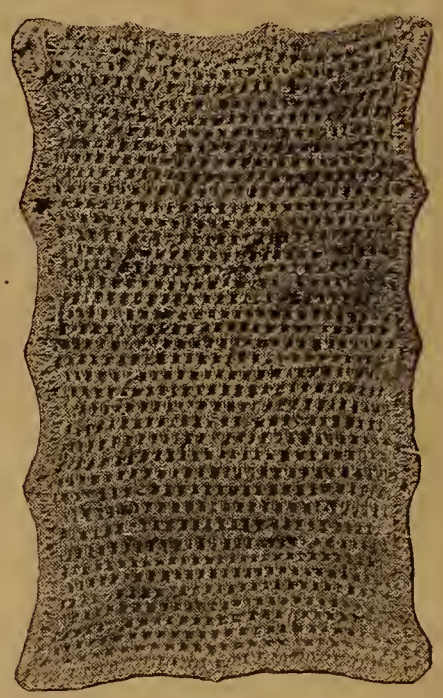
In serving turnips, there are but few ways. Carefully boiled, mashed and seasoned with salt and pepper and plenty of butter, they are always good. Young turnips cut into dice, simmered in salted water till tender, drained carefully and served in a hot dish with plenty of cream sauce are not to be despised.

Boiled whole, the inside may be scooped out, leaving a wall a quarter of an inch in thickness, then these cups may be filled with peas, making a very pretty dish, as well as a good combination of flavors. A. W. O., Michigan.

Crocheted Dish-Cloth

By Evaline Holbrook

A PRACTICAL and most durable dish-cloth that costs nothing may be quickly crocheted from odd lengths of cotton store string, that have been allowed to accumulate. Tie the pieces together with weaver's knots, that there may be no danger of their coming apart, then, with a No. 3 bone crochet-hook, begin the work, as follows:



Ch. 64, turn, 1 d. c. in the sixth ch. from needle, *ch. 1, skip 1 ch. of foundation, 1 d. c. in the next. Repeat from * to the end of the ch.

Second Row—Turn, ch. 5, 1 d. c. in first space, *ch. 1, 1 d. c. in next space, and repeat from * to the end of the row, then repeat the second row until the dish-cloth is the desired size. The cloth illustrated is 39 rows deep. At the end of the last row turn, ch. 2, and work all around the cloth, putting 2 d. c. in each space on all the edges, and 8 d. c. in each corner space. At the end of the round join and fasten off.

Two Dressing Tables

By Edith C. Salisbury

I HAVE constructed a dressing table out of a couple of soap boxes set one above the other, with a separate board top. The cover I made of plain scrim with a stenciled border. In front I hung a curtain of cretonne, fastening it in place with small, brass-headed tacks. The boxes underneath make a convenient cupboard where things are reasonably free from dust. Then I rejuvenated an old mirror by applying a couple of coats of enamel paint of a shade to match the prevailing color of the cretonne.

I have also contrived to make an effective piece of furniture out of an old-fashioned washstand to which I gave a fresh coat of paint, and which I draped with old-fashioned chintz. I pushed the washstand close to the wall and hung a mirror flat above it. Over the mirror I hung a shelf made of a plain board

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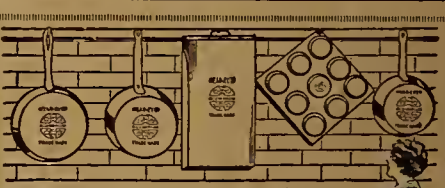

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Ever read the above letter? A new one appears from time to time. They are genuine, true, and full of human interest.

painted to match the woodwork, and fastened it to the wall with brass supports. The shelf and mirror were draped with chintz like the stand.

Evaporation Cools

By E. C. Shaver

A COOLER which can be made to do without ice may be made by utilizing the old idea of water evaporation. Build a frame similar to that suggested in Fig. 1, leaving all four sides open. The top should be raised in the shape of a pyramid and covered with galvanized iron or other sheet metal that will not leak. Spring hinges, like those used on the ordinary screen door, may be used for the door.

Cover the entire box, top as well as all four sides, with burlap, as in Fig. 2. Above the box suspend a bucket in the bottom of which is a small hole; or, better still, a small stop cock through which the water may drip. The water falling on the burlap at the top of the pyramid will run down on all four sides and keep them moist. Because of the evaporation of the water caused by the air circulating through the box the temperature will be much lower on the inside than on the outside. Such boxes are extensively used in arid lands where ice is not available.

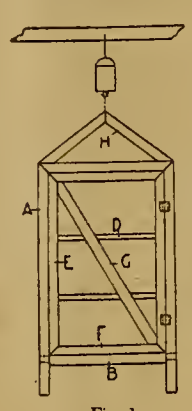


Fig. 1

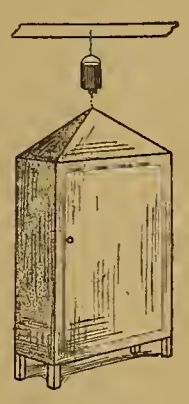


Fig. 2

To build a cooler about the size of an ordinary ice box, the following lumber will be needed: 4 2x2x48 inch pieces for A; 4 2x2x24 for B; 8 2x2x18 for shelf supports; 9 ¾x6x24 for shelves D; 2 1½x2x42 for door sides E; 2 1½x2x20 for top and bottom of door F; 1 1½x2x48 for door brace; 4 2x2x18 for H; 1 set hinges, 1 knob, and 8 yards burlap 24 inches wide.

In the Southwest, where the climate is both dry and hot and usually windy, the Spanish-speaking people almost universally cool their drinking water by this principle of evaporation. They use a jar or jug of porous earthenware which they hang up in the wind. The evaporation of the water through the pores of this vessel keeps the water surprisingly cool in the hottest weather.

Spoon to Pit Peaches

By H. F. Grinstead

PUT an old heavy kitchen spoon on a grindstone, or use a file to cut it down from each side until it is half an inch wide. Grind each edge until sharp, and you have a semi-circular blade that passes easily around a peach pit without waste. The small handle of the spoon will likely cut the hand. It may be

best to cut off the spoon handle halfway up and attach a round wooden handle over this.

How Judith Cured Herself

[CONTINUED FROM PAGE 13]

"They're dears! And they needn't think they can throw me away. I'm going to stay in this family."

That evening Remington Swift received notice that he had been drawn on the jury to serve in the county seat twenty miles away. There was no gainsaying the summons.

"But, gracious, Mary, my apples! I can't go away this time o' year of all times! Al Peters may be round any day."

"Too bad, Father, but I guess he won't come for a week or two. You'll be back all right then. Why, this is only the second, and he never comes before the twelfth or so."

"No—no, he doesn't, that's so. I guess it will be all right. Glad I've dug my potatoes, and most of the other stuff's in. Judy can manage to keep the tomatoes and pumpkins covered if it should happen to turn cold."

"Judy? Can't you trust *me*, Father?"

Father swung about in his chair.

"Think I'm going to serve on any jury without you? What do you think I married you for? No, sir! You're going along too. It's a good chance to visit your Cousin Persis, and you need a little recreation. She's going along, isn't she, Judy?"

"Of course she is. I'll go up and pack her things."

"But, Judy—but, Father—"

"But, Mother! You are not to say a word, not a word. If you think you'd worry about me here alone I'll have Hannah Doolittle come and take care of me. If I don't know enough to cover up the pumpkins, she will. I'll have Hannah, truly, dear."

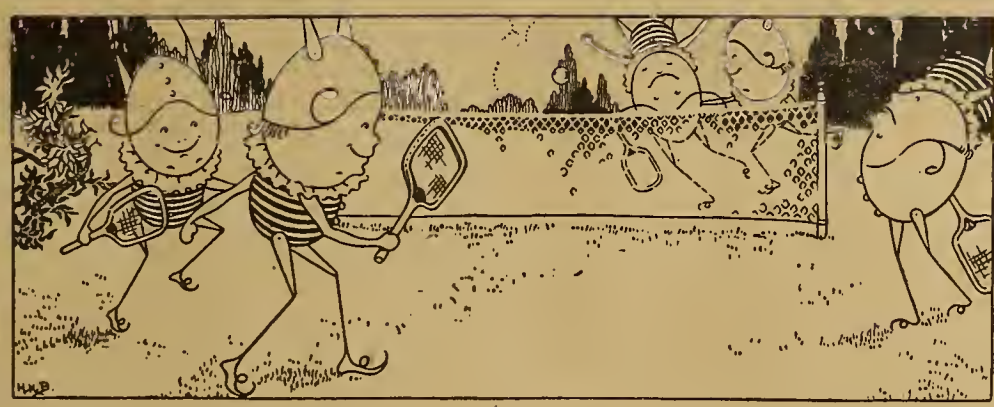
So it was settled. A day later Judith and Hannah Doolittle, a weazened little old lady of long acquaintance, were left to themselves. It would be for only a week probably. Father had served on juries before, and never much longer than that at a time.

[CONCLUDED NEXT ISSUE]

The Whizzles and the Wumps Play Tennis

A Poem Written for the Young Folks

By PAULINE F. CAMP



BEHOLD upon the tennis court
The Wumps and Whizzles spar.
They're jumping high and swooping low;
At least the Whizzles are.
The Wumps had rather miss a ball
Than in the heat to run,
And think it very dangerous
To play out in the sun.

When first they came upon the field,
No rackets did they bring.
The Whizzles gathered round them in
A most impatient ring.
"Where are your rackets?" cried they all.
The Wumps looked pained surprise;
"We thought it would be quieter
Without them," one replies.
"The dictionary says a racket
Is a clattering noise,
And so we left them all at home,
Preferring quiet joys."

One Wump was seen with open mouth,
A-gazing in the sky.
"Why don't you hit the ball?" they called.
He said, "It's gone too high."
The Whizzles looked, and then louder laughed
Than ever they've been heard.
"You silly Wump," they jeered, "your ball
Is nothing but a bird."

Of course the Whizzles won the game.
"Hurrah, hurrah!" they cried,
And when the Wumps enquired why,
"You've lost the game," replied.
Then all the Wumps went to the shop,
And glasses strong they bought;
And o'er the field, with earnest care
And anxious eyes, they sought.
They lifted stones, looked 'neath the hedge,
And peered up in the trees;
They dug in woodchuck holes, and
Searched the grass on hands and knees.
To curious passers-by their answer
Always was the same:
"Now don't disturb us, if you please,
We're trying to find our game."

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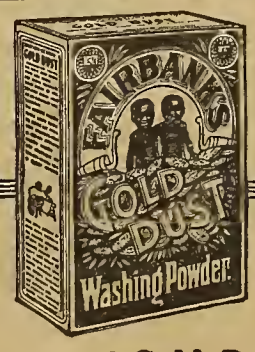

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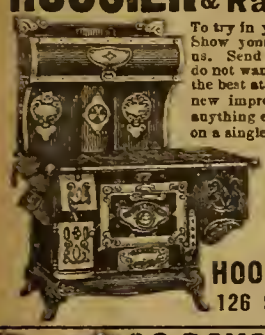

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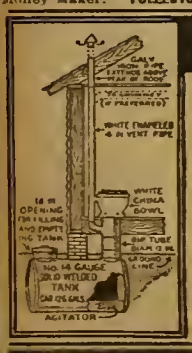

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The new process welds all the 34 pieces, of which the average boot is made, into one composite whole. The result is an article which gives really phenomenal wear.

Standard color black—also made red or white.

Nearly all reliable dealers sell United States Patent Pressure Process Heavy Service Rubber Footwear. If your dealer has none, write us telling what kind of boots you wear and we will see that you get supplied. Look for the United States Seal; insist upon it. It is only placed upon boots constructed under this new extra-wear process.

United States Rubber Co., N. Y. City

Using City Waste

How Garbage is Made into Fertilizer

By GEORGE C. PARSONS

TWENTY to twenty-five tons of low-grade fertilizer are made from the 150 to 175 tons of garbage produced a day by Los Angeles. This fertilizer sells from $14 to $18 a ton delivered to nearby towns, depending on the freight. The product contains nearly half as much plant food as high-grade fertilizer. The amount of the fertilizer used varies from one and one-half tons an acre for orchards to two tons and more for vegetable lands.

More than 15,000 hogs and more than 60,000 chickens are being fed on a select grade of the garbage product called garbage tankage. All of the particles of no food value for live stock are removed in making the garbage tankage. Before being fed, the tankage is soaked in water for twelve hours.

A half-million-dollar factory was built on a six-acre tract in the industrial section of Los Angeles last February to manufacture the garbage of the city into tankage and fertilizer.

Fifty-one cents a ton is paid to Los Angeles by the garbage products company for the garbage. This will amount to one million dollars during the life of the ten-year contract the city has with the garbage products company.

Formerly the garbage was shipped to distant hog ranches. A few years ago a large incinerator was built, but soon lost its roof by fire. The incinerator was never used again.

Three years ago Los Angeles again was considering the incinerator plan to dispose of the city's garbage. It was in fact considering a $400,000 contract for an incinerator.

This new incinerator proposition with its excessive first cost and its following heavy running expense and cost of upkeep appeared so foolish and useless that the city council was urged to adopt some plan by which the garbage could satisfactorily be returned to the soil.

About the same time a local firm which had been experimenting for two years, at a cost of $5,000 a month, made a proposition to the city by which the company would handle the city's garbage.

One half of the garbage of Los Angeles was handled by the fertilizer company at first. The rest of it was fed to hogs. This amount was increased gradually until September 1st all of the garbage of Los Angeles was used by the garbage reduction company.

Here is the manner in which the garbage and rubbish is handled after it is collected and hauled to the factory:

All waste papers and ordinary combustible rubbish is dumped on a moving table which gradually carries it to the boilers which furnish steam to cook the garbage.

Experienced men sort the material as it slowly moves toward the boilers and remove all good paper, which is baled and sold to paper factories. Everything noncombustible is also removed. The rest of the material is carried near a chute into which the rubbish is fed, thus putting the rubbish directly into the fire box under the boilers.

All garbage and dead animals are delivered to another building, in the upper part of which operates an ordinary machine-shop transfer table. The steel bodies of the garbage wagons are lifted from the running gear to a height of 20 feet and taken to any desired part of the building. The dead animals are taken by the same hoist on the transfer table to a concrete floor. Here they are skinned and cut up into pieces of 10 to 20 pounds. The pieces are thrown into the same conveyors with the garbage and taken to an adjacent building.

Twenty huge tanks, called dehydrators, are in this building. The tanks are much like an old-fashioned churn with paddles, except that the axle to which the paddles are attached is vertical instead of horizontal. The tanks are covered with three or four inches of asbestos, and are heated to nearly 200 degrees Fahrenheit. The garbage is fed into this through a chute from the overhead conveyor until the tank is nearly two thirds filled. The top is then bolted on, after which there is almost no odor anywhere in the plant.

Gasoline is then pumped into the tank until it covers the entire mass, the paddles begin to revolve, and from nine to fourteen hours the cooking process continues, during which time most of the water is distilled and the grease taken up by the gasoline. Two port holes, into one of which an electric light is reflected enable the operator to look into the tank.

When the water in the mass has been evaporated, the gasoline is drained off and is pumped into huge boilers outside the building. Fresh gasoline is then admitted until it stands about six inches deep over the garbage, which is again cooked for an hour. After removing this second application of gasoline the cooking and stirring is continued dry for forty minutes. Then a door near the bottom of the tank is opened and the paddles force the entire mass out onto a concrete floor. This mass is sorted carefully. Then it is shoveled into conveyors which take it to another building. Here an immense rotary screen, a grinder, and the sacking and shipping departments handle the garbage tankage. The demand is such that the tankage is loaded directly into cars as it is sacked.

The gasoline from the dehydrators is taken to the cooling boilers, in which the gasoline settles and the grease hardens, after which the gasoline is pumped into another container to be used again. Steam is then turned into the boiler containing the grease, and after keeping it at 320 degrees Fahrenheit for a short time the melted grease is pumped into containers located conveniently for loading to be shipped. The Los Angeles soap factories take all the grease product.

Potatoes: 20 Tons an Acre

SOME of the logged-off lands near Tacoma, Washington, produce 20 tons of potatoes an acre. After the lumber companies have cut down the timber, they sell the land. The purchasers remove the stumps, and plant the land to potatoes.

Potatoes make a very good crop on logged-off lands. The cultivation necessary for successful potato culture puts the soil in an excellent condition of tilth, and much plant food is made available for succeeding crops.

The large amount of humus in the soil of former timber tracts is due to the leaves and other vegetation falling and rotting on the ground for centuries.

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FARM and FIRESIDE

The National Farm Paper - Every Other Week

ESTABLISHED 1877

Saturday, August 28, 1915 5 cents a copy

This picture won first prize in the Farm and Fireside photograph contest

His Part of the Chores

Readers Win Valuable Prizes

THE contest for farm photographs closed the first of July, and since that time the judges have been busy going over the pictures received. There were 5,250 photographs entered in this contest. The winners are:

First Prize: Harry F. Blanchard, New York.

Second Prize: John H. Turner, Texas.

Third Prize: Wm. Allen, New Jersey.

Fourth Prize: Grace E. Mounts, Ohio; Bertha Earnest, Missouri; Mrs. H. Galatas, Lousiana; S. J. Wigley, Alberta, Canada; Ella Doremus, New York.

Fifth Prize: In this group there were twenty-five winners who will know that they have been successful by the check which reaches them by September 1st.

The pictures which won prizes become the property of *Farm and Fireside;* the others will be returned on September 10th if stamps have been supplied or if you send stamps before that time.

In sending stamps address

Photo Contest Editor
Farm and Fireside
Springfield, Ohio

Tell About Your Fire

Another Contest

HARDLY a day passes but the papers tell of some farmer who has been "burnt out."

Now what we want to do is to print the experiences of readers who know about fire-fighting and fire prevention in the country. How did your fire start? What did you do? What should you have done? What is the best way to protect farm buildings against fire?

For the best letter from your own experience we will give a prize of five dollars; for the next best, three dollars; and for all others used, one dollar each.

Be as brief as possible, and address your letter to the

Contest Editor
Farm and Fireside
Springfield, Ohio

This contest closes October 9, 1915

The Editor's Letter

At Coolfont Farm, August 16, 1915

WHAT shall a man do who has children who desire education, especially if these children must leave home to pursue their studies? Shall the family leave the farm? Suppose it is not financially possible to defray the expenses of board, books, and tuition from the farm, but that it might be practicable to make a living by removing as a family to a college town, and thus desert the farm for educational reasons— A big problem!

A subscriber living in Mercer County, Pennsylvania—Mr. T. S. McClintock—raises this question and asks our views. Here is his letter in part:

"We are old subscribers to FARM AND FIRESIDE, and were much interested in your story "The Brown Mouse," and are interested readers of your editorials. Our family consists of my wife, myself, and a son fifteen and a half years old. We have great faith in your judgment, and my boy suggested that I write you this letter, stating the main facts and asking your opinion."

I sometimes fear that I am not a proper person to give advice in such cases. I have never been to college. I have never been a pupil in any school save rural schools. I have been considered a successful teacher in rural schools, in teachers' institutes, as a principal in a village school, and as a principal in a ward school in a city. I have studied law without attending a law school, and for fifteen years made a living practicing law. I have written nearly a dozen books, and expect to write more. I am now a farmer and writer. While there has never been a day in my adult life when I have not regretted my lack of university training, I seriously doubt whether it would have been of any particular value to me as an earner of money in the law, or in literature—both professions generally called "learned." I was handicapped in the business of teaching on account of my lack of a degree—but not as a lawyer or a writer. I do not believe that the possession of a degree in agriculture would be of much value to me as a farmer, for I am a constant student of the business of farming in practice, in books and farm papers. I wish I had it, but I do not think it would make me a much better farmer. Because of my personal history, so largely independent of higher institutions of learning, I feel that my confidence in any person's ability to meet and master even affairs of learning without schooling may lead me to give wrong advice.

Needs His Son's Help

MR. McCLINTOCK moved from a city upon a rather poor farm five years ago. He says he has made many mistakes, and does not claim to have been completely successful on the farm; but he has a good market, and thinks he knows now what to do to win success, but his wife's health is not good, and he does not see how he can possibly succeed on the farm without his son's help. The boy will soon finish high school, and college for him means a basic change of some sort in the relations of the family to the farm.

"I have the opinion," says he, "that the whole country is simply education-crazy, and that a modern education is seldom worth what it costs—too much surplus and worthless frills and embellisments. . . . My boy is unusually bright, very intellectual, is healthy but undersized, and apparently his mind is much stronger than his body, and I feel that his body should be nurtured rather than his mind. He has a much better education now than I had when I quit school, yet I have since scraped together a good education."

A good high-school course to-day opens the way to almost every avenue of intellectual advancement. It is the key with which almost every door may be opened by the boy or girl who possesses it. A course of instruction in any institution of learning really takes even the best student no great distance along the march of mind. About all it does is to face him in a certain direction. If he is already faced in that direction, he can dispense with the course. As a matter of fact, few students go from college faced the proper way, or under much headway going in any direction. This is partly due to the personality of the students, and partly to the lack of efficiency in the institutions of learning.

If we had a university somewhere, no matter how few the students, to which boys and girls of great natural capacity only could be sent; if we had some way of selecting these young people so as to be sure of their potential greatness, it would soon bring on an age of Pericles for America. These great young men and great young women would leave such a university not only faced the right way, but impelled toward higher things by an inward force which would be irresistible. To such a school Elihu Burritt, the learned blacksmith, would have gone and been saved the years of unrequited toil which finally made him a freak instead of a great scholar. A university like that might have lifted Robert Burns from the plow, where he was a failure, to the position which Carlyle thinks he would have won if he had been given a chance in any university—a position in which he might have "changed the whole course of British literature, for it lay in him to have done this!"

Burns was a Diamond

AND yet, can we be sure that Carlyle was right? Robert Burns, composing his poems while following the plow, won imperishable fame and the clear right to the title of the greatest lyric poet of the English-speaking races. If he had gone to the university he might have produced works more like Carlyle's own (the latter the educated son of a stonemason), but would he have given us "Flow Gently, Sweet Afton," "Tam O'Shanter," "A Man's a Man for A' That," "Bonnie Doon," "Auld Lang Syne," "Of A' the Airts the Wind Can Blaw," and the other songs that we love even though they are in a dialect strange to most of us and are more than a hundred years old? I can't answer. Burns was not a pebble but a diamond. Whether the colleges would have polished him or dimmed his luster is a question which may well be asked but cannot be answered.

"His spirit," says Carlyle, "which might have soared . . . died, we may almost say, without ever having lived."

But let us be thankful for the songs Burns gave us, and not mourn with Carlyle, the scholar, that we have no tragedy from the plowman's pen.

To my mind the greatest man and the best writer America has produced was Henry George. He got his education at the printer's case. Horace Greeley did likewise. Herbert Spencer and John Stuart Mill were both educated out of school. Hugh Miller, from a working stonemason with no education, made himself a well-known geologist. Everywhere I meet splendidly educated men who have never been to college.

If this boy of Mr. McClintock's has that agony of the spirit which drives the ambitious to sacrifice all for learning, it will last him for a few years. He can wait. If he loses his desire for knowledge, that loss of interest will prove to my mind that all he would have got out of college would have been a degree. Just a mere college degree is not worth enough to justify the sacrifice of the farm, the plans for a home, and all the things which go with the removal. But to some minds the university course is worth every possible price. Let this boy's bent be tested by a few years of delay, during which he can help put the farm on its feet. Let him spend those years in the companionship of the greatest minds of the world through their books. He is fond of agricultural reading. Good! Give him plenty of it, and all the other good reading he can peruse—history, biography, travels, science, and some good fiction and poetry.

If in five or six years he feels that he cannot be happy unless he goes to college, and has a definite object in going, help him to go. But if he is the real thing in intellectual ambition he will go and work his way through if necessary. If he wants to go merely to join a fraternity and be a four-years' social lion, while it might pay parents with plenty of money, it is a foolish expenditure for poor folks.

Herbert Quick

Always in Good Humor

SERVES THEM RIGHT

MINISTER—For shame, my lad! What have those poor little fish done to be imprisoned upon the day of rest?

TOMMY—Tha—that's what they got for—for chasing worms on a Sunday, sir.—Exchange.

PAW KNOWS EVERYTHING

WILLIE—Paw, are all of the men fools? Maw says they are.

PAW—No, not all of them, my son. Some of them are bachelors.

MAW—Willie, you go to bed right this minute.—Cincinnati Enquirer.

TIME TO QUIT

SERGEANT—'Ey, there! Where are you going?

THE ABSENT-MINDED SOLDIER (who climbed out of the trench)—'Oly Jiminy! When the bloomin' shell whistled over'ead Hi thought it was twelve o'clock!

AGREED WITH HIM

The new minister was invited out to supper. He was a bachelor, and when he helped himself to the biscuits for the third time he looked across the table at the hostess' little girl, who was staring at him with round, wondering eyes.

"I don't often have such a good supper as this, my dear," he said in his most propitiatory tone.

"We don't either," said the little girl, smiling. "I'm awful glad you came."—Peoria Star.

CORRECT

Although this rhyme may make you grin,
It's true, you will agree:
There are two or three monkeys in
Most every family tree.

THOSE OLD SAWS

"Know thyself," quoted the sage.
"Familiarity breeds contempt," quoted the fool.—Cincinnati Enquirer.

FOREWARNED

CAUTIOUS DOCTOR—Excuse me for bringing you my bill; but you know how difficult it is to get money out of anyone's heirs.—Boston Transcript.

AVERSE TO WORK

A lawsuit was recently in full swing and during its progress a witness was cross-examined as to the habits and character of the defendant.

"Has Mr. March a reputation for being abnormally lazy?" asked counsel briskly.

"Well, sir, it's this way—"

"Will you kindly answer the question asked?" struck in the irascible lawyer.

"Well, sir, I was going to say it's this way: I don't want to do the gentleman in question an injustice, and I won't go so far as to say, sir, that he's lazy, exactly; but if it required any voluntary work on his part to digest his food—why, he'd die from lack of nourishment, sir."

THE horse may become extinct in time, but the donkey will remain with us until society has ceased to be.—Peoria Star.

THE doctor is the only man who makes a success of life by going from bad to worse.—Chicago Herald.

WISE FATHER

WILLIE—Paw, when is money tainted?

PAW—When 'taint coming your way, my son.—Cincinnati Enquirer.

THE FINISH

"I told you Jones was foolish to be courting so many girls."

"How did it turn out?"

"As you might expect. His expenses were so heavy that he got behind with his board and had to marry his landlady."—Life.

E.W

FARM and FIRESIDE

—PUBLISHED BY—

THE CROWELL PUBLISHING COMPANY, SPRINGFIELD, OHIO

Copyright 1915 by The Crowell Publishing Company

Vol. XXXVIII. No. 24 SATURDAY, AUGUST 28, 1915 *Published Bi-Weekly*

No one would connect this field with the one shown at the bottom of the page, but they're the same. This picture shows the spring stand that followed drilling winter wheat in corn stubble trash. A few cornstalks are still on the ground, but not enough to do any harm

New Seeding Machinery

What's on the Market Nowadays, and What It Will Do

By D. S. BURCH

IN ONE large implement factory I visited, the experimental department looked like a great machinery exhibition. Displayed on the walls there must have been over a thousand different parts of seeding machines. These were not standard equipment, but were all obsolete parts that had been discarded because something better had since been discovered.

One of the officials explained, "Even with our big organization and our constant effort to improve, as you can see, we have to watch out for competition. Some bright fellow in another concern is always getting a new idea."

A good seeding machine puts your seed down at a uniform depth into a moist seed bed where it will sprout and mature evenly. You can put in your crop whether the wind blows or not. Rains won't wash all the seed to the lowest part of the field, or perhaps into the creek.

Another advantage is your ability to put seed in a trashy soil. I'll agree with all the critics that this is a makeshift way of seeding, but even while it is being condemned this method works.

Look at the pictures and see what you can do with a disk drill. The old stalks did not do much harm after all, did they? They rotted to pieces and made a rather good mulch. Disk drills are splendid for working in trash. Not that such a seed bed is as good as one carefully plowed and harrowed, but there are times when you have no choice but to plant in trash or be too late.

For ordinary hard soils the single-disk furrow opener works best, but in sandy soil or on steep hillsides a double-disk is better. The seed discharges between the disks and gets to the bottom of the seed furrow before the dirt falls in.

For loose soil covered with small stones, the hoe drill makes a good furrow opener. A disk would have trouble staying in the ground, but the hoe drill pushes the stones aside and deposits the seeds at a uniform depth under the surface. But a hoe drill will not work in trash, nor will it go over large stones as well as a disk drill.

Hint to Farmer-Inventors

THE "shoe" or runner furrow opener is used mostly on corn planters and beet drills. This leaves a very roomy seed trench, and also gives exact spacing between the rows. For working in trash there is also a stub runner having a point that runs under the surface so it won't collect litter. In fact, there are scarcely any conditions of seed bed which inventors have not conquered. The manufacturer's problem now is to give more and better service for less money.

"We get a lot of good suggestions from users of our machines," one manufacturer said, "but the trouble with the most of them is the extra cost. The farmer-inventor seldom takes that into consideration. A dollar added to the price of some of our machines would practically kill the sales. The demand is always for something as good or better, but cheaper."

One result of this feeling is the perfection of combination machines. An Ohio company is putting out a drill that will seed not only the standard grains, but clover, alfalfa, and grasses as well. You can also sow fertilizer at the same time. This machine costs $95, but when you take into consideration the storage space saved and its ability to do the work of several drills, each costing perhaps two thirds as much, it is one of the cheapest tools you can buy, providing you have a sufficient variety of crops to require a seeding machine of such wide range.

It sows about the width of two corn rows, and has single-disk furrow openers. The disks are set zigzag in two rows, with eight inches between the disks in each row. This gives an eight-inch effective clearance, but the seed is put in four inches apart because the back row of disks sows between the rows made by the front row. The same concern makes a small drill that sows from 28 to 34 inches wide. This is a new tool designed for seeding grass or grain between rows of standing corn just before the last cultivation. Other concerns offer combination drills made by putting a grass-seed attachment on a regular grain drill. You can then sow grain or grass, or both together.

How Alfalfa Seed is Wasted

NOW just a word about the saving of high-priced seed. Good alfalfa seed, drilled uniformly at the rate of only five pounds per acre, will give 27 plants per square foot, which is a great plenty—in fact, much more than you will find in the average heavy stand of alfalfa. So you can see the tremendous waste of broadcasting 20 pounds or more of alfalfa seed per acre, as is the common practice. When you do it you sacrifice to wind, birds, surface-washing, and general waste about seven seeds out of eight.

At 15 cents a pound (a conservative price for first-grade alfalfa seed) a waste of 15 pounds per acre means $2.25 worth of seed thrown away. You can get a good combined alfalfa and clover drill for $65, so you see that one will pay for itself just in seed saved before you have seeded 30 acres.

One of the most interesting developments in seeding machines will be the outcome of tests intended to prove the best distance apart for drilling various field crops. On the majority of drills the furrow openers are spaced at seven or eight inches. Even with that distance, patented oscillating devices have been used to allow the furrow openers to side-step clods because drills are expected to sow in any ground where a horse can travel.

The Test of a Seed Drill

HOWEVER, the Illinois Station and several others found that "a perfect stand is best secured by drilling one half the amount of seed and then cross-drill." But that took twice the time and work. Naturally the logical thing to do was to shorten up the distance between the furrow openers so as to put in half as much seed per row and make twice as many rows. In practice this has brought about the planting of grain in rows four inches apart. That's about as close as the furrow openers will work well, even when the seed bed has been well worked down and freed from lumps.

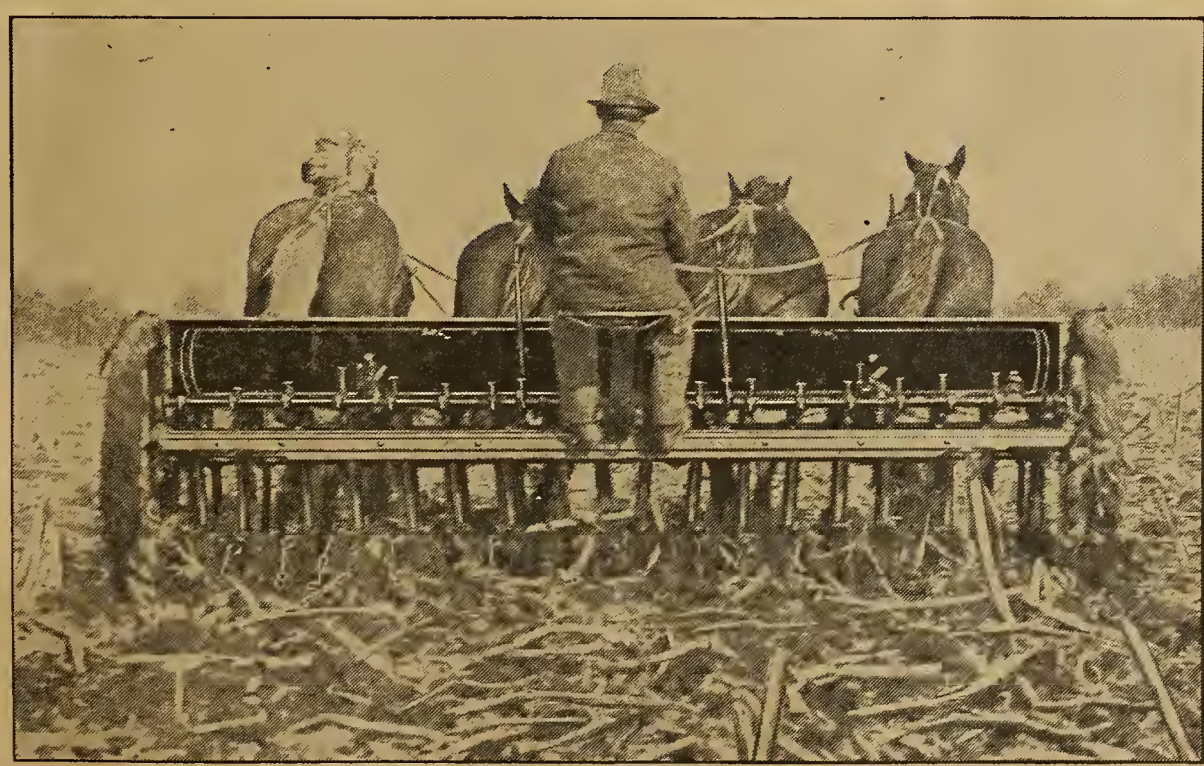
One Illinois manufacturer has invented a wide-furrow shoe that he claims will distribute the seed uniformly in a subsurface path two and one-half inches wide. He calls this broadcasting under the surface. But the ground must be fairly dry and loose for best results. Experts still differ radically on the question of furrow openers and the right distance of spacing. But the evidence thus far does not favor any one machine, and we need not expect much of a change for a long time. There are at least a dozen good makes of seeding implements now on the market, and this is how you can tell the good ones from the poor ones:

A good seeding machine will put the seed as deep as it goes itself. The reason some machines pull hard is because in order to put seed in an inch deep they have to make a seed trench about two inches deep. A good drill puts the seed at the bottom of the furrow before the dirt falls into it, and also scatters the seed a little in the furrow instead of depositing it in a straight narrow line. With disk drills you should be able to tilt the disks so as to make a wide or narrow furrow at will. Rows as close together as four inches are probably as close as practical. But so long as the seed is good and is planted at the right depth for that seed in the right kind of seed bed, it hasn't yet been shown that it makes much difference whether the rows are four inches apart or eight.

By test the four-inch rows have given a little the better result in some cases, but as one manufacturer pointed out, "If you make as good a seed bed to prepare for drilling rows eight inches as for four-inch space, you will get as good results."

The roots of grains and grasses spread out under the surface and make good use of all the soil anyhow. You can notice this especially in corn, and anyone who attempts to advocate the close planting of corn doesn't get a very attentive audience.

The weed problem must be considered with uncultivated crops, of [CONTINUED ON PAGE 12]



Drilling wheat in a muddy cornstalk field is not a difficult task if a single-disk furrow-opener drill is used. The seed is deposited in a firm seed bed under the stalks

Some Interesting Farmers

How an Italian Succeeds

Adapted Crops and Manure Pay Angelo Moretine

By C. M. MORRISON

TWENTY-SIX years ago Angelo Moretine, his wife Teresa, and their six children alighted from a train at Holden, Missouri. Angelo Moretine had six silver dollars in his pocket, knew no language but Italian, and his possessions were in the bundles and the odd-looking little trunk lying on the station platform.

Now the Moretines, who a little more than a decade ago were herdsmen on Mount Tonale, overlooking the Austro-Italian frontier, own 350 acres of Johnson County, Missouri, land worth $100 an acre. The Moretines own a lot of live stock and farming equipment, and have money in the bank.

Raising crops that were adapted to Missouri conditions, manuring their acres well, and working hard brought about this change for the Moretines.

For two years after the Moretines came to Holden the head of the family tamped dirt under the ties of the Missouri Pacific Railway, saving his meager wages as a section hand. In 1893 he bought on time payments 40 acres one mile from Holden, and was forced to defend a lawsuit, dragging through several years, to maintain his title to the land.

One Old World practice, brought from the sterile, ancient acres of the Alpine slopes, has been the secret of the Moretines' rise. Holden's most familiar spectacle is a Moretine perched on a wagon load of manure, driving from the little village out to the Moretine acres. No one pretends to know how many hundred loads of manure have been taken from the stables of the villagers by the Moretines out along the mile of road to the original 40 acres.

The Moretines have always bought run-down places and increased the fertility. In 1912 they grew an average of 50 bushels of corn the acre. Their wheat averaged 40 bushels. They practice a rotation of corn, wheat, and red clover. For three years now they have been experimenting with cowpeas. The big profit on the Moretine acres comes from hogs, an animal that Angelo, senior, knew little about when he was an Alpine herdsman. Now he ships the porkers in carload lots.

The ten ears of Reid's Yellow Dent corn taking first place at the annual "roundup" of Johnson County, Missouri, agriculturists held last November, were grown by Angelo Moretine, junior, one of the six little Moretines who had stood on the Holden station platform twenty-six years ago. And be it known that Johnson County is one of the corn counties of Missouri.

Moretine made many mistakes in the beginning. He wanted to farm after the Italian methods; he planted acres of grapes, but learned by bitter experience that Americans do not drink the sour wines of Italy. The vines were long since cut down and burned, and the Moretines stick to the "hog and hominy" style of farming.

Always eager to learn, they were the first to come forward for help when C. M. Long came to Johnson County as farm adviser. When the Farm Bureau was organized the Moretines were among those keenly interested. Hence Angelo junior's winning of blue ribbons and his sales of seed corn at $3 a bushel.

With a wife, six children, and six silver dollars, Angelo Moretine settled in Johnson County, Missouri, twenty-six years ago. Now he owns 350 acres of good land and has money in the bank

Preserves Fruits

Western Woman Makes a Good Income

By EDMUND G. KINYON

WHEN Mrs. Sarah Roberts and her invalid husband settled upon a small farm in Nevada County, California, high in the foothills of the Sierra Nevadas, Mrs. Roberts cast about for some avenue within the scope of her limited strength and resources which would lead to a quick and assured income. Former owners of the little farm had planted a miscellaneous orchard, now in bearing but of little promise as a bulk-selling proposition. Money crops from the fields were out of the question, poultry did not appeal to Mrs. Roberts, while lack of local markets precluded extensive cultivation of the excellent garden tract.

Then came the idea! Mrs. Roberts recalled that back in Honolulu, where she was born and spent her early life, the American residents, a large percentage of whom were from California, had desired the fruits and jellies and condiments of their early life.

Why not cater to the longing, or the prejudice, or the fad, or the fancy, which it pleased them to entertain?

Catalogues of home-cannery plants were studied by Mrs. Roberts. The smallest and cheapest canning outfit was beyond her means or need. Recourse was had to the town tinner, who constructed a galvanized iron boiler 22½ inches in length, 18½ inches in width, and 8½ inches in height. It had a tight-fitting cover and adjusted itself perfectly to the wood range in the Roberts kitchen. Twenty containers fitted into it compactly for the cooking process of certain of the products contemplated. A generous supply of porcelain and aluminum cookers, grinders, strainers, and various other utensils completed the equipment.

There is a good market for all of the products Mrs. Roberts manufactures

Three months before anything could be grown to ripeness, Mrs. Roberts mailed a simple circular to a select list of households, composed mostly of residents of Honolulu, all, with few exceptions, unknown to Mrs. Roberts. To these she offered to ship, late in the autumn, boxes of jams, jellies, pickles, chow-chow, chutneys, canned fruits and vegetables, and various other table delicacies—Mother's kitchen flavor guaranteed—at prices which, while not excessive, indicated something extra choice. It was an experiment, but the theory upon which it was founded proved sound—orders sufficient to keep that kitchen factory running overtime came with every trip of the rural mail carrier.

The Roberts preservatory is now a well-established industry with a long list of regular patrons. Shipments are made by freight, late in the season, many of them going thousands of miles by rail and water. Payment in advance is the rule. The products of the old orchard and garden tract, of little promise in the bulk, bring good returns when condensed and refined by labor and skill. Absolute quality is the motto of the Roberts preservatory.

Regains Health

City Man Gets New Hope on a Farm

By L. C. STOUT

OUR success is a little tiny minnow of a success; but it is—well, let me tell you about it.

I was in the rut of ill health and debts caused by ill health. I lived in town with my wife and four children. We lived very humbly, as my wages were only $48 a month. We could just make a living, but nothing more. Finally I had to quit even this poor job on account of bad health. I was told that I had to lie up and take treatments. Of course I couldn't lie idle all the time, but I did odd jobs for two years, and we succeeded in existing. We existed largely because I had better credit than I was entitled to so far as ability to earn is concerned; and we became involved in debt to the extent of about $100—not much to most of you, but a whole lot to a sick man with a family and no job.

We could see no way to make a living any more, to say nothing of paying our debts; so my wife persuaded me to move on a little farm of 80 acres. We rented it on the halves, both as to crops and stock. After I had the farm rented I was able to borrow $1,000 at five per cent. With this money I bought a half interest in the grain and stock on the farm, and a good team, an excellent wagon, and implements to get along with for a couple of years.

Well, we made a good living from the first. It was rather surprising to all of us, unless it was my wife. It was a little hard the first year, but nothing like what it had been in town. My health improved, and that was worth everything to all of us. I can do a big day's work now, every day in the week.

The season of 1914 was our second year on the farm, and we have the place rented for another year. We have paid off all our town debts, the interest on our farm notes, and two notes of the principal. I am still $700 in debt, but we have a half interest in 8 good milch cows, 3 calves, 5 brood sows, 11 head of shotes, and we have a third horse. We have 110 Buff Rock hens and several new pieces of machinery.

If things continue to go as well with us, we shall be out of debt in two more years, and shall have equipment and stock for a farm of our own. Then we shall buy a home. We feel that we are at last on the road to success. I don't think there is anything that pays better than keeping good milch cows and a good cream separator, raising the good heifers for cows, and the steer calves for beef, besides feeding to pigs the skim milk not taken by the calves. We are getting 34 cents for our butterfat at the time this is written. There are many families in the city that could do quite as well as we have done if they were willing to work. But maybe they need to be as needy as we were before they will make the change.

Plods to Victory

Keeping at Work Overcomes Failure

By AN INDIANA FARMER

MY FATHER made a success by refusing to be crushed. Father was born on a farm, and reared on one; and when called upon to decide as to the division of the old property, he decided to buy out the other nine heirs and live and die on the farm.

There were 160 acres in it, and almost every acre needed clover and fencing. All told, the getting of the farm and fixing it up put him pretty deeply in debt. Things would run smoothly for a while, and then there would be a jolt. Some of these were cholera which took his hogs, and the river which flooded out his corn—farmers know about the slings and arrows which outrageous fortune uses when she gets after a farmer.

Father paid no heed to misfortunes. He paid the interest when it was due, and occasionally a little on the principal. If Old Dame Nature had been his sole foe he would have got out of his rut sooner. His faith in men was his best trait, but it was his undoing. Along came A, B, and C, first one and then another, and asked father to go on their notes as security. Father was honest, and so considered everyone else. He went on the notes of A, B, and C, and every four months they had to be renewed.

Soon the notes came faster than every four months. When A brought an old note to be renewed, he fetched a new one along with it. It seemed a shame not to give Father the chance to sign all the notes he was willing to execute. When the panic of 1893 came, there was a crash—and there lay Father underneath the ruins, along with A, B, and C.

Down the road went Father with a wife and five kids to make a new start in a county in the eastern part of the State, where they farm with side-hill plows and jumping shovels. Father wasn't used to this kind of farming, and made a failure of it.

After this second downfall Father went West. He had no means, and failed to make more than a mere living; but he succeeded so far as to scratch up the fare back to Indiana and the old county, where he started in at the bottom again working by the day on a farm. Financially he was now on a firm basis—he was so far down that he couldn't get any lower.

It took him ten years of close saving, with the help of two sons, to accumulate a thousand dollars in cash—but he did it. He didn't give up, but kept everlastingly struggling. His great success, it seems to me, lies in that fact, and not in what he has actually done since he started on the slow climb up the ladder again. He saved this thousand dollars in ten years, working by the day and farming on shares.

With this money he bought teams and machinery, paying cash as far as his cash would go, and running in debt for the rest. The best farm he could rent was full of washed-out gullies, and with no fencing. On 65 acres that first year he gathered 1,000 bushels of corn. Forty acres of it were so burned up with the drought that he never harvested it. The second year was also a dry one, but he managed to garner 2,500 bushels of corn. Then the hill wasn't so steep.

Father is now a comfortably fixed farmer—as well off as the average who have not had his ups and downs.

EW

If given a chance, the American hog will furnish not only the United States with meat, but Europe also; and in doing it the hog will yield a handsome profit to the American farmers

Hog Prices Will be High

The World is Eating the Pork Produced in America

By JOHN COWNIE

HOG products which were exported from the United States for the ten months ending with April, 1915, amounted to more than 115 million dollars. The large export increase was due to the European war. And when peace comes again to Europe, the demand for hog products will be greater than now because the hog herds of Europe are being slaughtered to furnish the armies with meat.

The supply of beef in the United States will be limited for several years, and the production of mutton will not be able to meet the demands of a rapidly increasing population. There is but one big source of supply left—the hog.

But the American hog, if given a chance, will furnish not only the United States with meat, but Europe also; and in doing so it will yield a handsome profit to the American farmers who prepare now for the high prices that are certain to be paid for hogs in the future.

I know from a practical and successful experience of more than fifty years in the swine industry that the hog is the most profitable animal kept on the farm, and in the future, owing to the decrease in the supply of other meats, will be, when properly cared for, more profitable than ever. Even the tenant farmer, with his short lease and limited capital, can embark successfully in the swine industry.

While with present conditions—corn bringing from 60 to 75 cents a bushel, and hogs $7.00 to $7.25 a hundredweight—many farmers may consider that it is more profitable to sell the corn than to rear hogs, yet if this is done it will be a serious mistake.

I well remember when hogs have been low heretofore, and corn high, farmers sold nearly all their hogs, including their brood sows, in a desire to sell their corn. And these same farmers, when conditions have changed, were scouring the country and attending every farm sale in an endeavor to secure brood sows at fabulous prices. They desired to reimbark in the swine industry and secure the high prices and profits they had lost and which their more fortunate neighbors were enjoying.

That there will be a temptation the present season to fatten the brood sows, after weaning the pigs, and send them to slaughter is already evident.

Many farmers object to holding over their brood sows because the sows get too fat and fail to breed. But this condition can be prevented easily by keeping the sows apart from the hogs that are being fattened. With a good grass pasture and very little grain after the pigs are weaned, the brood sow will gain in vigor and be in excellent condition for breeding next December, though somewhat thin in flesh.

Don't Give Sows Much Corn

UNDER no circumstances should a brood sow be fed all the corn she can eat, and it is a great mistake to bring her to the time of breeding loaded with fat.

When a brood sow raises from six to ten vigorous and healthy pigs, proving herself a good milker and a careful mother, she should by all means be kept on the farm. In giving birth to her young, if it becomes necessary, she can be handled by her owner much easier than a young sow. Every farmer knows the difference there is between a heifer with her first calf and the family cow that has been a mother more than once; and what farmer would think of fattening for slaughter the young cow that had given birth to a fine calf, proved to be gentle, and a good milker?

If perchance there should be in the herd brood sows that are cross and ill-natured, that are poor milkers and reared but two or three pigs, such sows may well be fattened and sold. But to sacrifice a sow that has reared a good litter of pigs, with conditions that will make the demand for hog products for years to come the greatest ever known, is simply to throw away one of the greatest opportunities ever afforded the farmers of the corn-growing States to make hog-raising the most remunerative of all farm work.

When I was appointed on the Board of Control of State Institutions in Iowa as a farmer member, the care of the farms at the Iowa state institutions naturally fell to my lot. I soon found that the farms were in wretched condition, the land unproductive, and very few hogs, largely ill-kept and unthrifty.

There were no hog houses worthy of the name, no pastures; feeding was done on the ground for want of feeding floors; the kitchen swill, of which there was a large quantity, was emptied in filthy troughs located in a bed of filth and mud. After seeing the conditions, the wonder was not that there were so few hogs, but that there were any at all.

I pleaded with the legislature for appropriations for hog houses, feeding floors, and pastures, and, the money being appropriated, conditions were bettered.

A few years afterward, in answer to my request as to the number of hogs at the respective state institutions on July 1st of that year, the totals exceeded 5,000 head, all thrifty and in excellent condition.

At one of the state hospitals for the insane, where former conditions were such that the rearing of hogs had been practically abandoned, a herd of more than 300 head were slaughtered at an average age of ten months. The average weight of the whole lot was 300 pounds, dressed.

Need a Good Hog House

IN REARING hogs, a good hog house is indispensable, as is also a feeding floor and a good pasture with an abundance of grass, preferably clover and timothy.

Blue grass and alfalfa are also good, so is white clover; but my preference is red clover and timothy. In fact, one of the pleasures of my life has been to see a large herd of fine, thrifty hogs wading in a field of red clover, picking off the clover blossoms to be converted into the finest quality of pork that was ever produced.

A concrete floor is often recommended for hog houses. I prefer a wood floor, raised from two feet to three feet above the ground.

My objection to a concrete floor is that it is cold and damp, while a wood floor three feet above the ground, with a free circulation of air beneath, is always dry—a condition to be desired with hogs.

Hogs prefer the wooden floor, with an abundance of clean dry straw in winter for a bed, and very little—but what there is of it clean and dry—in the summer.

Concrete feeding floors answer a good purpose, as the hogs are kept upon the floor but a short time during meals, but a plank floor three feet above the ground has some advantages, especially in winter during heavy snowfalls. The wood floor can be cleaned of snow without building a wall around it, as is the case with a cement floor on the surface of the ground.

Some advocate a roof over the feeding floor, but I much prefer the open floor, where the wind and, above all, the sunlight can reach every part of the floor, and thus aid in keeping it in a sanitary condition. Sunlight and an abundance of pure air are essential both in the hog house and on the feeding floor, and cleanliness is one of the main requisites in rearing hogs for profit.

The hog house and bedding should be kept scrupulously clean at all times; and, if the opportunity is given, the hogs will co-operate with the owner, for the hogs, unlike horses, cattle, or sheep, will never soil their bed when given freedom.

The feeding floor should be well cleaned after every meal, and all feed troughs should be scrubbed, cleaned, and frequently rinsed with a weak solution of carbolic acid or other disinfectant to destroy any disease germs that may be present.

Too much importance cannot be attached to the subject of cleanliness in the rearing of hogs, and if I could induce every farmer who rears hogs to follow the methods I have indicated, with clean, wholesome food, no moldy, sour, decayed food to be given, and an abundance of pure clean water at all times, in my judgment the ravages of swine plague and hog cholera would be materially lessened and in time entirely eradicated.

At the season of the year when many pigs are still with their mothers, both sows and pigs should have the range of a good pasture. And in addition to the food furnished by the mother, the pigs should be well fed to hasten growth and get all the gain possible before cold weather.

Feed the Pigs by Themselves

WITH a good feeding floor enclosed by a close fence, the pigs can be fed by themselves and the sows kept out, and I found that, instead of a gate hung on hinges, a sliding door constructed like a window sash, that can be raised and lowered and secured by bolts at any point, is a great convenience in feeding the pigs.

This door can be shut while the food is placed in the trough, and to admit the pigs the door is raised and secured at the proper height to admit the pigs and at the same time keep back the sows.

As it often happens that the pigs are not of the same size, by raising the door only high enough to allow the smallest pigs to enter, the larger and stronger are kept back, and it is surprising how the little ones will work their way through the crowd clamoring for admission.

After the smaller pigs have been satisfied, the door is raised to admit the larger, and last of all the door is opened to its full height, admitting the sows to clean up what, if any, food remains in and around the troughs.

By this method the smaller pigs are given the advantage, and the result is they gain rapidly in growth on the larger pigs until an even and uniform size results.

The selection of food at this stage in the life of the pig is all important, and it must be borne in mind that growth and not fat alone is absolutely necessary.

With old hogs, whose frames are developed, nothing excels corn for fattening. With an occasional feed of roots and oats for the sake of variety, corn and water, with a mixture of salt and charcoal on the floor accessible at all times, watering always before feeding, will give excellent results.

But with growing shotes, food for the growth of bone and muscle must be provided as well as to make fat, and ground oats, ground barley, wheat shorts, and "red dog" flour, with other food of like character made into a thin swill with water and properly salted, make an ideal food combined with corn.

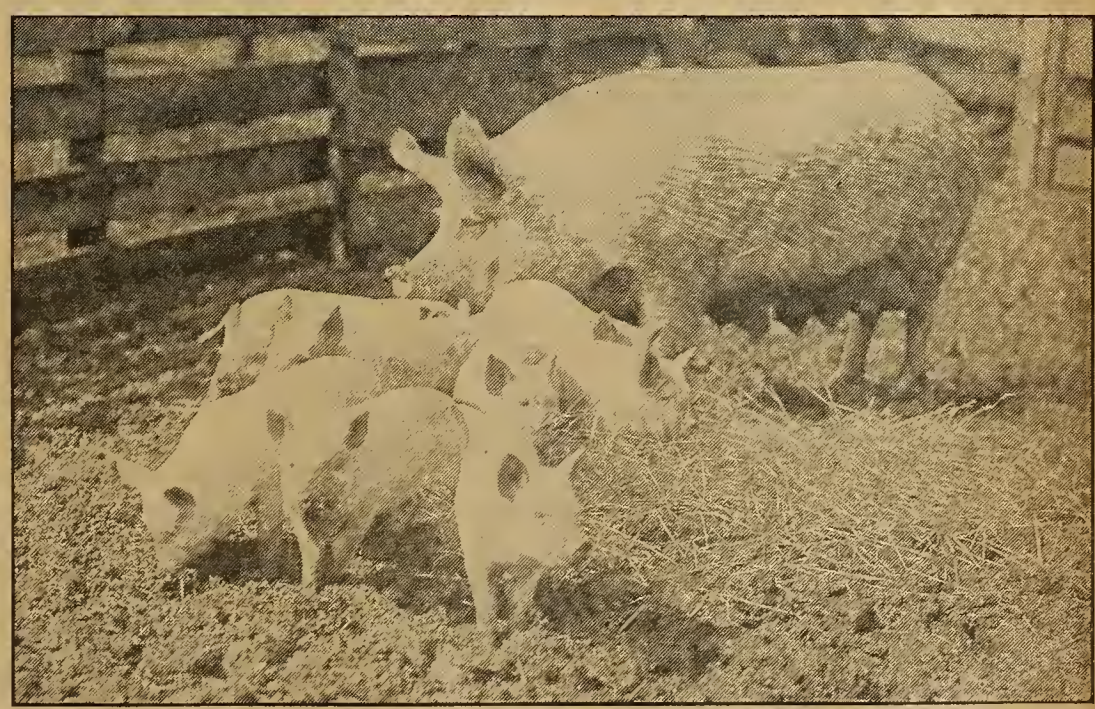
Corn meal does not make a good swill, being too heavy, and I much prefer shelled corn soaked in water for twelve to twenty-four hours, according to the weather. In very warm weather twelve hours may be sufficient, but in cool weather it may require twenty-four hours, but care must be taken that the corn does not become sour.

Salt should always be added to the water in the barrel in which the corn is soaked, sufficient to season the corn to make it palatable for the human taste. It is well for the herdsman to put his finger in the water and test it in his mouth before adding the shelled corn to the water in the barrel.

All swill should be salted, and should be so clean and pure that, with the exception of kitchen slops, the finger and the mouth of the attendant can be used to test it and have it the same degree of saltiness as human food.

By testing in this manner, if the swill is found to be sour, the addition of a pound package of baking soda, the same as used in the kitchen, to a barrel of swill will prove beneficial; and having purchased soda by the box to feed my pigs and shotes in this manner, I consider it money well spent. The soda, being an alkali, neutralizes the acidity of the swill and prevents scouring in the pigs, a complaint that is much easier prevented than cured, and which, when once allowed in a herd of pigs or shotes, proves a very serious matter.

The objection to ground oats, especially for small pigs, is the shells, being too coarse to be consumed; but as oats are one of the best foods for the production of bone and muscle, I have found excellent results by purchasing fine oatmeal, [CONTINUED ON PAGE 11]



When a brood sow raises from six to ten vigorous, healthy pigs, proving herself a good milker and a careful mother, she should be kept on the farm

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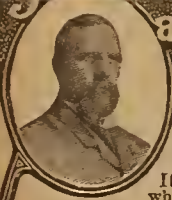

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Fighting Hessian Fly

Growers Battle Pest for 1916 Wheat Crop

By HARRY M. ZIEGLER

A SMALL long-legged, dark-colored, mosquito-like fly ruined several fields of wheat on Long Island, New York, in 1779. The flies lived five or six days only, and during that time ate little if anything. The farmers could not understand how such short-lived flies could do so much damage. The origin of the flies was a mystery. Then it was recalled that Hessian troops had been landed three years previous by the British army near the site of the ruined wheat fields. This gave rise to the theory that the flies were in the straw the troops brought with them.

In more recent times this little fly has caused a loss of a billion dollars to American wheat farmers during a single crop season. This year millions of dollars were lost because of the work of this fly. Many more millions will be lost in 1916 if some concerted action is not taken in fighting this mosquito-like enemy.

This little flying foe, for nearly a century and a half the enemy of the American wheat farmer, is none other than the dreaded Hessian fly.

One hundred and thirty-six years of experience has taught wheat growers a lot about the Hessian fly. Of late years the state experiment stations and the United States Department of Agriculture have helped the farmer wage the battle against this pest of European origin.

Plowing early, planting late, and the co-operation of wheat farmers in this practice will win the battle against the Hessian fly for the 1916 wheat crop of the United States.

Some farming communities by rotating crops, plowing wheat stubble deep before the middle of August, destroying all of the volunteer wheat, sowing wheat after the fly-free stage, and keeping their land in a high state of cultivation have not been damaged seriously by the Hessian fly for years.

Plowing ground early kills the flies while they are in the pupal or resting stage. This is the form in which they live before they emerge as flies. Planting the wheat late means the flies that were not killed by the plowing, or were in other fields that were not plowed, will develop into flies and not have any wheat on which to lay their eggs. Co-operation is necessary because serious infestation may come from a field half a mile to a mile away. The fly attacks rye and barley as well as wheat, but it does not trouble oats.

Hessian Flies Have Troubles

THE Hessian fly has other troubles of its own too. There is not anything a still smaller fly would rather do than lay eggs in the larvæ of the Hessian fly. The partly grown Hessian fly then not only furnishes a home for these smaller parasitic flies, but provides the food for them. A Hessian fly larva thus used soon ceases to be. The parasitic fly cannot be depended upon to kill all of the Hessian fly larvæ. The parasite does not do much of its Hessian fly destruction until the Hessian flies have increased to great numbers.

Hessian flies come from two sources—the stubble of the previous crop, and volunteer wheat. Thus it is necessary to start the fight on the Hessian fly a year before harvest.

The life history of the Hessian fly is both interesting and inspiring. Interesting to know how well Nature has provided for the multiplication of the foes as well as friends of the farmer; inspiring to a better farming practice.

The time the fall brood of Hessian flies emerges from the pupal, resting, or flaxseed stage into the full-grown fly varies from the middle of August in the North until the last of October in the South. The most of the flies emerge in the wheat belt during the last two weeks in September and the first week in October, depending on the locality. This is the reason for planting wheat after the flies have emerged and laid their eggs.

During their brief existence as flies the females lay from 100 to 150 eggs. The eggs are reddish-colored, are deposited in parallel rows on the upper surface of the leaves of the wheat, the barley, or the rye plant. Every row of eggs will be composed of three to five eggs.

The eggs hatch within a few days into small reddish maggots. The maggots are cylindrical, are twice as long as broad, and soon turn white. They crawl down the leaf and burrow into the plant between the leaf sheath and the stalk. Here is where the Hessian fly sucks the juices of the plant and causes such serious damage.

By the time winter arrives the maggots have become full-grown; their skins have changed to brown, and have become hardened. This is the way the flies pass the winter. This stage is known as the pupal, resting, or flaxseed stage. They resemble a flaxseed in this stage.

Infested wheat plants have broader, shorter leaves of a darker green color than fly-free plants. The infested plants do not tiller or stool, stand straight upward in the row, and do not cover the ground between the rows. Infested plants winter-kill easily.

The flies that have survived the winter emerge from the flaxseeds early in April. These flies deposit their eggs on the leaves of the uninfested plants. The eggs hatch into maggots within four to eight days, become full-grown maggots within three to four weeks, and enter the flaxseed stage. It is this spring brood that causes the straw to fall badly a short time before harvest.

If the stubble is disked immediately after wheat harvest, many of the flies in the flaxseed stage are exposed to unusual climatic conditions, which proves fatal to them. Such a farm practice also conserves moisture and makes plowing easier. From three to four weeks after disking the ground should be plowed to a depth of six to seven inches. All stubble and volunteer wheat should be buried under at least three inches of soil. This will prevent the flies from reaching the surface of the soil. After plowing, the ground should be refirmed and worked into a good seed bed. It should be kept mellow and free from weeds and volunteer wheat.

Fires Destroy Plant Food

BURNING wheat stubble or wheat straw in the stack does not control the Hessian fly; but if such a practice is continued widely, millions of dollars' worth of organic matter and plant food will be destroyed.

Many of the flaxseeds of the Hessian fly are located so low in the crown of the plant that burning the stubble would not destroy them. Many other flaxseeds are in the straw above the ground higher and would be destroyed, but not enough to justify burning the stubble. The parasitic fly that preys upon the Hessian fly spends its summers in the stubble and straw above the ground. Thus burning the stubble would destroy the parasitic fly. Then there is the danger of a fire's getting beyond control and spreading to other fields.

Light dressings of straw may be spread upon fields without spreading Hessian flies. The winter temperatures would destroy most of the fly flaxseeds in the straw. The only danger from spreading a light top-dressing of straw on fields would be the danger of spreading the joint worm and the white-straw worm. Injury from these insects can be recognized by the presence of white heads of wheat in the field. Unless the field was badly infested with these two worms the year previous, there is no danger of spreading them.

Rye can be planted for fall pasture in communities where the farmers have been depending on fall wheat for pasture. The rye will become infested with Hessian fly, and should be plowed just before winter begins, or in the spring before the first of April. This will destroy all of the flaxseeds of the fly in the rye. Where spring pasture is needed and rye does not winter-kill, rye can be planted in the fall after the flies have emerged and deposited their eggs.

Back-to-the-Farm Answers

THE Government asked about 45,000 crop correspondents some time ago to find out the history of the "city folks" who went back to the farm. Here are the main classes:

1. Small tradesmen who give up a hopeless struggle in an overdone retail business and seek in the country a small farm where the cost of living is cheaper and where a more independent existence can be maintained.
2. Merchants who failed in business and who seek the farm to escape the mischances of employment.
3. Mechanics, school teachers, tailors, clerks, and sawmill men who seek agriculture as preferable to uncertain business and employment.

It is infrequent for a city-born man to become a farmer. Usually the men who give up city occupations to return to the farm lived on in boyhood.

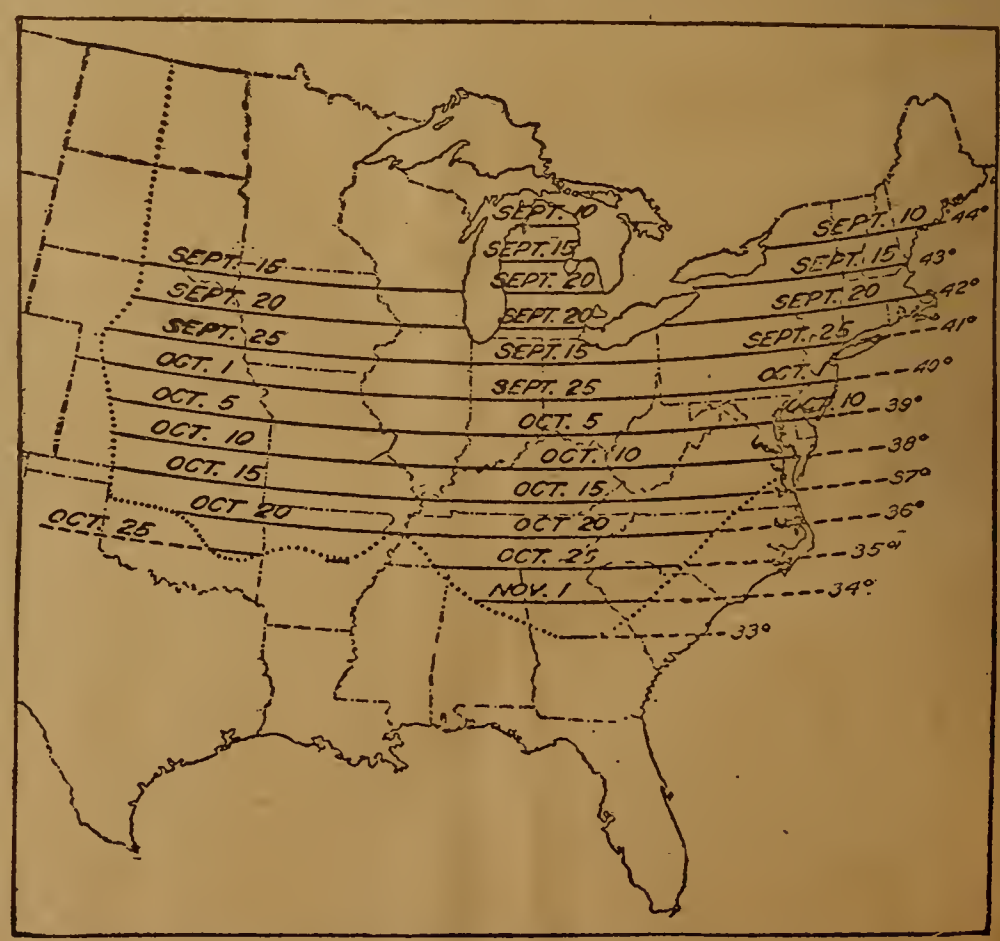
A large part of those who return are farmers' sons who have been lured from the farm by the false promise of high wages but who subsequently learn that the cost of living in the city is high and that the money rate of wages in the city is deceptive. These young men often return when they find they have made no headway in the city. Retired farmers, also, who moved to town with the expectation of spending the rest of their lives there have in many cases found town life short of their expectations and have returned to farms.

Lastly, there are the agricultural colonies made up to a large extent of foreigners who had formerly been farmers in their native country and who welcome opportunity to colonize on farms.

Next Year's Potatoes

HERE are some simple rules for getting the most from your potato crop. Plant potatoes only about three inches deep if the land is heavy or rains are frequent. In average soils plant four inches deep; in semi-arid regions five inches, or even more. Prepare a roomy seed bed so as to give plenty of room for the tubers to develop. Never apply stable manure to land on which potatoes are to be planted within a year. Fresh manure seems to promote potato diseases.

Opinions differ as to the best way of seeding. Single eyes will usually return the largest yield for a given amount of seed potatoes used, but probably the best practical way is to cut a medium-sized potato into about three pieces, each of which has two or three good eyes. Plant one piece in each hill. Do not use small potatoes for seed, as too large a proportion of the crop will be unmarketable.



Map by U. S. D. A.

To avoid damage from the fall brood of Hessian flies, wheat, rye, and barley should be planted after the dates shown on this map

E

Increases the Income

How a Side Line Pays Expenses of a Family

By ALEC JAMES

TWO years ago I was suddenly dismissed from my position. It was a knockdown blow, for I had come to regard myself as permanently placed and secure in a sufficient salary. We had been married less than two years, and the day I was dismissed our cash in the bank did not exceed three hundred dollars. You can readily imagine that I worried. However, a good offer soon came to me in another city and we moved at once, and I am still there, busy and contented. However, that one experience of being fired hit us with a terrific jolt, and put some new ideas into our way of living.

We learned that it is worth while to sacrifice pleasures for the sake of laying up a reserve fund against the rainy day, and we also decided that one should have, if possible, a second source of livelihood on which to fall back if the weekly pay check is held up.

We put this idea of ours to the test in a modest way, and it has developed successfully into a good business. I have had little time to devote to it myself, but I have mapped out the general scheme, and Mrs. James's young brother "Brick" has done the real work. He lives with us and goes to high school, giving his spare time to the enterprise, of which he gets one half the net proceeds.

Buy Eggs in the Country

THIS is how it came about: Most of our lives had been lived in the country, and we had never known what it was to be without fresh eggs and pure butter. We found it difficult to get these in the city where we were living, so one day Mrs. James wrote one of our country friends and asked that she express us two dozen eggs fresh from her own hennery. We ate eggs three times a day for nearly a week after that first case came. When it was nearly gone we ordered another one, and kept on ordering as they were needed. After paying our friend what she got from her local merchant, adding in the postage and the express on both the full and the empty case when returned, our eggs cost us an average of three cents a dozen less than we had to pay our local merchant for a product of unknown parentage and uncertain age.

We decided to try to get also some of the whole milk butter we used to have at home. So I wrote the manufacturer one day and asked him to express us six pounds fresh from his best grade. After paying him his price with express and postage, these six pounds cost us two cents a pound less than we had been in the habit of paying for what was not nearly so good.

You know how things will filter through an apartment building, Whether it is the English sparrow, the janitor's cat, or the laundress who carries the news, no one knows; but it gets around just the same. We had not been in the building many months until several of our fellow tenants had asked Mrs. James to let them share in her shipments of butter and eggs. Before long she was ordering a thirty-dozen case of eggs and twenty-five pounds of butter at a time, and ordering quite frequently.

Pays From the Beginning

ONE evening at the close of dinner, Mrs. James remarked, "Do you know, I sell enough butter and eggs right here in this building to pay for more than we use?"

Like a flash I saw a plan. I settled into my chair, dreaming and uncommunicative until my pipe almost went out. Then I began to talk my planning out loud to Brick and Mrs. James.

How many other families were there in our block who were tired of cold-storage eggs and poor butter, who would be delighted at the chance to have for their tables what we were having every day? How many were there in the surrounding blocks or along the boulevard a short distance away? Think of the clientele we would have could we reach every possible customer in our ward, or even our district of the ward! Why not start Brick out in the butter and egg business as a side line? Surely he could earn good money with his spare time. We determined to try it, and this is what we did:

We told the landlord our scheme and rented from him one of the unused basements in the building. For this we paid a very nominal rental. Here we installed an extra refrigerator of good size and a work table. This was our warehouse and Brick's office, and from it he has done a good business at a small expense.

I wrote the man from whom we were buying our butter, and arranged for Elgin prices on all orders of a given minimum size. The butter was to be shipped in one-pound bricks, wrapped only in oiled paper. We used our own cartons, bearing our own label, and they have proved to be a wise investment.

Before coming to the city I had known many farmers in my home State who raised good poultry. With each one I made a contract that he should ship me on a certain day of each week a given number of dozen of fresh eggs not over one week old. I agreed to accept as many more than this number as he could ship me, up to a certain maximum. For these eggs I was to pay him the wholesale jobbing price for best eggs quoted on the Chicago market the day I received his shipments. He was to pay express charges on both loaded crates and return empty crates. I was to furnish him these free in the first place. This contract netted him several cents a dozen more for his eggs than he could get from his local storekeeper or poultry buyer.

Tastes vary as regards the outward appearance of eggs; some prefer white, some brown. But everyone wants them to be of good size and uniform in appearance.

When the crates reach us from the country we carefully candle the eggs to find any stale ones which may have been overlooked by the producer. Then they are sorted into two sizes of brown and two sizes of white. The small eggs and those with irregular shapes and blotched shells are all put together into a fifth class. Any that are dirty are wiped clean with a moist cloth. This cleanses them without giving them the polish which generally denotes age and which always arouses the suspicions of an observant housewife. The four choice grades are packed into cartons with individual cells for each egg.

These cartons are of three sizes, and hold one, three, and five dozens each. On the top of the carton is an attractive label with our telephone number and street address. On the two narrower edges is printed the guarantee that they are fresh. If any complaint is brought us we give back the money without question or discussion.

Have Three Sale Outlets

WE HAVE two outlets for disposing of what is left after supplying our individual customers. All the choice grades are taken, in the one-dozen size cartons, by one of the fashionable markets down-town. The no-grade or discard eggs are bought by the local store at the regular wholesale price. This lets us sell the most of our eggs at a considerable advance over what they cost us, and the rest at just cost.

We have bought a motorcycle with a side-car parcel attachment for Brick to use in making his deliveries. This is a miniature refrigerator car in the summer, for in the top is a small ice chamber. In the winter this ice chamber contains heated soapstones to keep the eggs from freezing.

We have done no formal advertising. Through the word that has passed from friend to friend, and through a little personal solicitation from Brick, the number of our customers has grown steadily.

Our share from the business is now sufficient to pay all our actual living expenses.

Brick's share has paid all his school expenses and given him a small savings account.

Every young couple on a salary will find their security and peace of mind increased if they are able to build up on the side such a refuge business.

The Concrete Bridge

THE concrete bridge is a permanent improvement, requires few repairs, and has a substantial beauty. It won't burn, wash out, rot out, or rust out. It's there to-day, to-morrow, and as long as you live.

A Farm-Loan Graft

By Frank G. Odell

IN CENTRAL and northwestern Nebraska is a vast area of land suitable for stock-farming. Frequent fertile valleys yield good crops of wheat, corn, flax, and luxuriant alfalfa. This is the region commonly known as the "Sandhill Country," from which comes the world-famed Nebraska steer that makes the live-stock market of Omaha one of the greatest in the world. It was formerly thought to be fit only for grazing, but the development of agricultural science has demonstrated that the average farmer of intelligence has a good chance on a section of 640 acres.

Uncle Sam had several million acres in this region, which was once the habitat of the cattle baron who rented it from his beneficent avuncular relative at two cents per acre per year. The cattle baron was then lord in ordinary of this vast domain. It is now rapidly becoming settled with progressive farmers.

New Law Helps Settlers

THIS new opportunity is due largely to the service of "Uncle Moses" P. Kinkaid, Congressman from the big sixth district of Nebraska, who secured the passage of the Kinkaid Act, permitting settlers to homestead 640 acres of land in this sand-hill region. The settlement of this country has been expedited by the amendment of the homestead law, permitting final proof on three years' consecutive residence and cultivation of seven months a year.

The sand-hill country was once the home of the prairie dog. It is rapidly becoming the home of the "under dog"—the tenant farmer and the back-to-the-lander who haven't one chance in a thousand on high-priced land. Naturally these people need money. The necessities of the case compel them to become borrowers for a few years until their land becomes profitably productive. This is a little story from real life, showing how they get the money under present conditions.

In Nebraska, as in most States, there are statutes for the prevention of usury and extortion. Laws are occasionally noted for the ease with which they are evaded. This is an example:

A farmer friend of mine lives on a claim up in the sand-hill country. He will get his patent from Uncle Sam soon and he needs a thousand dollars to build a barn and buy some cattle and hogs and put in some alfalfa. He has a chance to get it on the terms divulged in the following letter, which comes to him from the county attorney, who ekes out his scanty salary by acting as agent for a farm-loan concern. Here is the letter:

OFFICE OF —— COUNTY ATTORNEY
—— NEBRASKA

DEAR SIR: The company makes loans at 5 per cent and 3 per cent. The note draws 5 per cent, and they charge 3 per cent a year in advance. Loans are made for five years. To illustrate: You make a loan of $1,000. You get $850 and pay 5 per cent interest.

I charge $10 on the $1,000 for making the loan and my expenses in seing the land. We loan on the average section $1,000. If the improvements are good and there is hay cut and there is alfalfa, we loan more. If you want a loan as soon as you get your patent, would be glad to hear from you. Yours truly, ——

This innocent-looking proposition works out about this way:

The borrower gets $850, giving his note and mortgage for $1,000, on which he pays 5 per cent interest.

The borrower pays:

Advance discount on loan	$150.00
Interest 5 years on $1,000 @ 5 %	250.00
Commission to agent	10.00
Inspection fee, cost of making papers, etc.	20.00
	$430.00

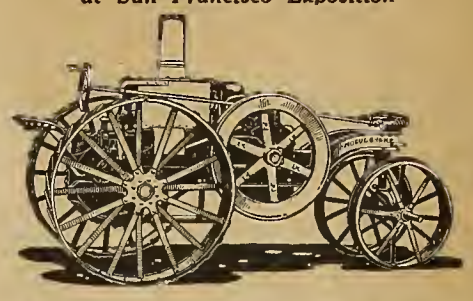
Cost per year on $850, $86, or a fraction over 10 per cent per annum.

The mortgage goes on record as bearing 5 per cent interest, and is taxed at its face value of $1,000, which tax the borrower invariably pays by agreement printed in the mortgage.

This is not cited as an unusual condition. It is quite common throughout the West since pioneer days. There is an element of risk in loaning in a new country which possibly justifies the charging of a higher rate. But it makes hard going for the homesteader.

This is the type of farmer who has most urgent need for a sound system of rural credit. The writer is not enthusiastically in favor of direct government loans, either to the farmer or the banker; but the prosperity of everybody waits for the success of those who are developing this new agricultural empire in the Great West. If Uncle Sam has confidence enough in them to give them a farm it ought to be possible to work out a better system of financing them than this "steen per cent" business.

Grand Prize Winner
at San Francisco Exposition



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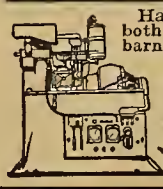

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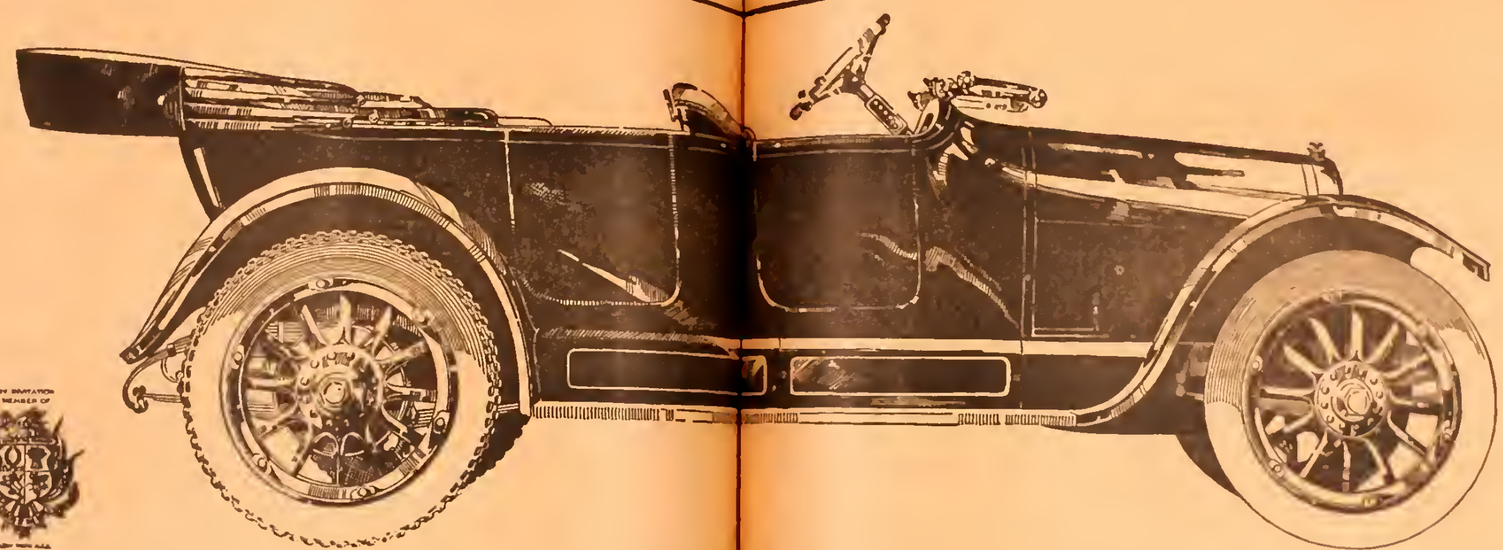

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Published every other Saturday by
The Crowell Publishing Company
Springfield, Ohio
Branch Offices: 381 Fourth Avenue, New York City; Tribune Building, Chicago.
Entered at the Post-Office at Springfield, Ohio, as Second-Class Mail Matter.

Subscription Price
One year (26 numbers), fifty cents. Three years, one dollar. Extra postage for Canada, twenty-five cents per year.
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HERBERT QUICK, - - - - - - - Editor

August 28, 1915

Butterine for Boys

A CERTAIN school in Chicago has awarded a contract to a packing firm for butterine to feed the boys for the next year, thereby saving several hundred dollars on the butter bill. The butterine is furnished at about a third of the price of good butter.

Economy, but at whose expense? The researches of McCollom in Wisconsin prove that young animals cannot grow on ordinary fats such as those from which butterine is made. The fats secreted by the maternal organs of the female animals seem to be what nature has provided for the young of all animals. These fats are found in the fat in the yolks of eggs and the butterfat of milk. Vegetable fats and other animal fats will not do.

The boys in that school are young animals. If they are to be well fed and properly nourished they need either butterfat or the yolks of eggs. Whatever small amount of butterfat may be used in making butterine, if any, will help them to grow; but that could be bought more cheaply in butter. Eggs in sufficient quantity for their needs would cost much more than butter. Therefore the economy ceases, even in dollars and cents, if the boys are to be kept in a thriving condition. If they are not so kept they will be partially starved, no matter how much butterine they may be fed. The extent to which this starvation will take place depends on the age of the boys.

There is no substitute for butter, even in the matter of flavor; and even if the taste could be counterfeited, Nature could not be fooled.

"Freedom" in Marketing

THE writer of this had some peaches for which he wanted to find a market. He reasoned that peaches being a good article of food, and there being a couple of millions of hungry people in Chicago, it would be a fine thing if he could ship to that point and sell to the push-cart men who vend peaches on the streets. So he had an investigation made to see what the prospects would be. The man who made the investigation knows all the ins and outs of the marketing business, and is in fact a dealer in farm products in Chicago.

"I find," says his report, "that even if a good run on the railway could be secured for your peaches into Chicago the trouble would arise in getting your cars properly 'spotted' on the tracks in Chicago—that is, in getting them properly placed for unloading on the railway.

"There is such a ramification of tracks here that a dollar or two slipped by interested parties to the brakeman or switchman would be sufficient to have the cars marooned on some remote switch, among hundreds of other cars, and by the time the head officials could be seen and the matter straightened out the peaches would be pulp."

Speaking of regulation, it would seem that here is a matter which might well be looked to. Peaches marooned on a remote side track for the purpose of destroying them by decay will not do much to cut down the high cost of living in the cities, nor add to the cost of high living on the part of the farmer. Aside from its being a form of highway robbery, it stands between demand and supply.

"I find," says the report, "that this has happened time and again in cases where independents have shipped to Chicago or other large cities.

"Then I find that push-cart men and hucksters, while otherwise ready and willing to buy peaches from the car, would be afraid to do so for fear that they could not make their regular purchases of commission men if it were found out that they were buying direct from producers. So you see it is the old, old question."

It is a reign of terror, you see, as well as a hold-up.

We need free markets.

It is indeed the old, old question. The grain men had to solve it when elevators refused to handle their grain unless it was bought through the combination of country elevators. And they have not finished solving it yet, after nearly twenty years of struggle. The co-operative elevator companies had to solve it in the case of lumber when the lumber combine killed off one effort after another on the part of the farmers to buy from mills, from jobbers, or from anyone on earth who had lumber for sale. The farmers' concerns were branded as outlaw concerns when whatever there was of outlawry was on the part of the illegal combines which were taking toll of everything the farmers grew.

The middleman is a necessity. But the middleman who organizes to compel shipments to him and his fellows is a menace to the producer and the consumer.

Use of the Telephone

THE telephone is a pipe line for thoughts. If your neighborhood isn't piped, it should be. Thoughts are things—the most important things in the world. Thought makes the whole difference between the civilized man and the savage. The ground upon which New York City is located was once bought for about twelve dollars. The men who sold it were naturally just as smart as those who bought it, but the latter had had the advantage of a freer circulation of thoughts. Pipe thought to the farm through the telephone wire.

Bugs and Studies

"THE corn-root aphis, or corn-root louse as it is more commonly called, is now the most generally injurious insect pest of the cornfields of Illinois." So says Prof. S. A. Forbes. The same thing is probably true to a less extent of the cornfields of other corn-belt States. Yet how many farm people know this root louse, ever saw it, can recognize its effects on the crop, have found out its life history, and are familiar with the methods by which it can be controlled?

What is true of this insect is true of dozens more. We neglect the mischievous little brothers of the grass and trees. We even sneer sometimes at an entomologist as a "bug hunter."

And yet the habits of most insect pests are easily learned, and their control mastered. It is a wonderful study, the insect world; and one in which are found the farmers' worst enemies.

What a pity it is that when we were little boys and girls, and wild with the joy of satisfying our curiosity, we were not, as pupils in the rural schools, allowed to peer into the private affairs of the corn-root aphis, the coddling moth, the white grub, and all their destructive brothers, cousins, and aunts! We should have been better farmers to-day.

And what a pity it is that the little boys and girls of to-day are few of them given any better chance in that direction than we had!

The Loan Shark's Work

"THE day of the loan shark is nearly over, and the legitimate agents and the stringent laws have got the loan shark on the run," said a speaker at a meeting of The National Federation of Remedial Loan Associations.

The "loan shark" is the legitimate outgrowth of a state of things in which no better agency is set up for the making of loans. The loan shark is often a bad man, a cruel man, and a blood-sucker; but he does not often get very rich. The average man who engages in the loan-shark business will lose his money. He also is the victim of a condition in which personal credits are not organized nor standardized.

Personal credit legislation is needed so that something better will take the place of the loan shark. If we tear him down we must build something in his place.

Getting More Live Stock

"IF WE can multiply the value of our live stock and equipment by two in the next decade," said Dr. Andrew H. Soule of the Georgia State College of Agriculture, "a more remarkable development along all lines will be witnessed in Georgia than the boldest imagination can conceive at this juncture."

This is not true in Georgia alone. Facts and figures show that under conditions like those of Wisconsin the farms pay best which have more than a third of their entire value in equipment and live stock.

This equipment cannot be obtained in the absence of a better system of personal credits, as well as cheaper land-mortgage credits.

In such States as Iowa, where the present accommodations for mortgage loans are good, the need for personal credits adapted to farming operations is quite as keen as anywhere else.

A Deception

THE farmers of some parts of the country are being victimized by people who are selling the seed of the "Brazilian Bean," said to yield at the rate of 200 bushels to the acre, and to furnish cheaper fertilizer than nitrates, to say nothing of its feeding value.

The fertilizer value is based on the fact that the beans contain 54 per cent of "nitrogen-free extract." This term contains the word "nitrogen," but "nitrogen-free" means that the extract contains no nitrogen.

"The quickness of the tongue deceives the brain."

The Wind Among the Mowing

By Phila Miranda Parmelee

YOU'RE a rollicking, wooing, wild sweet wind,
Blowing over the grasses;
You're a luring, caressing, mad sweet wind,
Ablowing over the grasses.
Bowing them, bending them, low—alow,
Lifting them, tossing them to and fro,
Twirling them, twisting them. Round they go,
Wanton wind, over the grasses.

You're a rippling, tempting, dreaming wind,
Blowing over the grasses,
You're a whispering, crooning, lullaby wind,
Ablowing over the grasses.
Over the uplands, blossom-strown,
Faring along ere mowers have mown,
Beckoned by visions, thine alone,
O wind that blows over the grasses!

You're a loving, warbling, elfin wind,
Blowing over the grasses,
You're a dancing, wandering, gypsying wind,
Ablowing over the grasses;
Dreaming, idling, mid unseen powers,
What cometh after, this time is ours;
Whatever the fruit, we've had the flowers,
And the wind blowing over the grasses.

Our Letter Box

Suggests Daily Labor Reports

FARM AND FIRESIDE: In your July 3d issue I have read the article on farm labor entitled "18,000 Men Wanted."

Yes, it's a disgrace to our civilization that so much time and money is spent in trying to regulate the morals of the people and almost no attention given to a matter that practically robs thousands of men every year of all their hard-earned money and creates vice where naturally there would be virtue.

You state the evil without giving the remedy. Why not let each State establish employment agencies that through a state-controlled agency will keep each other daily informed as to the labor supply? Each state agency should likewise be in daily communication with every other state agency through a national agency, so that men could be moved economically from point to point—that is, with due regard for distance and time and the number of men proportioned to the amount of work.

The credit of the State should be used to supply these men with a railroad ticket to be worked out, and laws passed that would make any violation of the trust placed in the men a misdemeanor.

Every day we get weather reports from all over the United States. Why not labor reports as well?

No attempt is here made to work out the detail of this plan, but it is one I have thought over a great deal, and believe it possible if the laboring organizations will lend a hand and get the laws passed by which the machinery may become operative.

CHAS. E. FOLSOM, Idaho.

Knowing the Hen That Lays

FARM AND FIRESIDE: The editorial of July 3d, "Types of Hens and Cows," flatly states that the accepted laying type of hen is a myth. That statement may be right, for I do not know what the accepted type may be. But I do know that when Mr. Tom Barron went through the contest hens at Mountain Grove, Missouri, and Storrs, Connecticut, a year ago he did pick out the best and poorest layers in pens of hens previously never seen. I saw him pick them out at Mountain Grove.

To expect a man to judge by a picture, and when he fails say it proves there is no such thing as a laying type in hens, shows prejudice.

To pick the best and poorest layers, he had to handle the hens as well as look at them. What would you think of a poultry judge who would look at a lot of the pictures of the poultry on exhibition and then pick the winners by looking at the pictures instead of at the birds themselves?

No more can a man pick the layers. He must feel them as well as see them.

Mr. Barron told me he did not trap all the thousands of hens on his farm. He picks out those of the right type and traps them, and traps those only. He further said that the high record hens he could get by trap-nesting without previous selecting would not pay him for the work of trap-nesting his entire flock.

J. R. MOONEY, Missouri.

EDITORIAL NOTE: The contention of Mr. Mooney seems to hinge about the definition of "types."

What is the meaning of type as applied to dairy breeds, beef breeds, draft horses, driving horses, and hens?

What does the dairyman mean when, after singling out a cow in a herd, he says, "There is a good dairy type for you?"

The beef grower similarly looks over a bunch of feeders and picks those that will develop into profit-making steers or heifers.

The breeder of drafters comprehends draft qualities as soon as his eyes get a good view of the animals brought before him.

Type, then, means conformation mainly when applied to animals, and conformation can be determined from photographs, but not so well as by viewing the animal from all angles.

Taking a hen into the hand and observing all her laying signs by touch as well as by sight, and determining layers by means of hen sense that comes from long practice, is more, much more, than observing type.

SO AS to be on the safe side, the live-stock authorities of the Panama-Pacific Exposition will not receive any of the dairy cattle which were cured of foot-and-mouth disease at Chicago. They cannot be shipped into California. The Chief of the Department of Live Stock states that, while there is no reason to suspect that these cattle will transmit the disease, other exhibitors object to their presence among the cattle exhibited.

E

Compete for Prizes

IMPORTANT live-stock shows will make the Panama-Pacific International Exposition of interest this fall. The first, a horse show, will begin next month.

The lifting of the quarantine in practically all States of the Union has removed fears that its existence might imperil the success of the shows. Now shipments to San Francisco may proceed unrestricted. Furthermore, ample funds are available to defray all expenses, the exposition being now on a profitable basis, its net profits for the last three weeks of July alone amounting to $210,243.99.

Both attendance and income are increasing steadily as the exposition period progresses. From opening day, February 20th, to July 31st the attendance aggregated 9,381,092, of whom 2,064,260 passed through the gates during the four weeks ended July 31st.

Applications for entry, accompanied by the necessary copies of certificates of registration in some recognized breed-record association, may be sent to D. O. Lively, chief of the exposition department of live stock.

Following is a date schedule of the various shows:

Show	Date	Entries Close
Horses, mules and asses	Sept. 30-Oct. 13	Sept. 1
Cattle, beef, and dairy	Oct. 18-Nov. 1	Sept. 15
Sheep, goats, and swine	Nov. 3-Nov. 15	Oct. 1
Carlots of live stock	Nov. 11-Nov. 14	Oct. 10
Poultry and pigeons	Nov. 18-Nov. 28	Oct. 15
Dogs, cats, and pet stock	Nov. 29-Dec. 1	Oct. 25
Children's pets	Dec. 1-3	Nov. 15

Almost half a million dollars has been devoted to these shows. The exposition has appropriated $175,000 for cash prizes and $15,000 for the horse show. Forty-five breed-record associations have contributed a total of $100,327 for special premiums, and the various state exposition commissions have set aside $150,230 for live-stock participation, the whole amounting to $440,557 for the live-stock events.

Arrangements have been made with the Transcontinental Freight Bureau and the Pacific Freight Tariff Bureau, by which shipments upon which freight and terminal charges to San Francisco have been prepaid in full will be returned to point of origin free of charge, and upon exhibits for which the charges have been prepaid and are not returned a refund of 25 per cent will be made on the charges. For the benefit of exhibitors who may wish to send all their stock in one shipment, the California State Agricultural Society has agreed to permit the use of the state fair grounds at Sacramento, California, as a receiving depot, where stock will be held, free of charge, until time for its reception at the exposition grounds. Prior arrangements for this must be made in each case with Chief Lively.

There is no charge for entry, stalls, pens, or water, although a nominal charge is made for receiving, cooping, benching, feeding, exhibiting, and returning poultry, pigeons, dogs, cats, and pet stock. Feed will be provided by the exposition at cost prices.

Stock-Car Disinfection

THE charge for disinfecting a double-deck stock car is usually $4, and for a single-decker $2.50. Railroads ordinarily do not disinfect cars except when required to do so by quarantine regulations.

The charges for disinfecting are assessed against the shipper.

Safeguarding Silage

A DISCOVERY by a Michigan farmer, Mr. A. B. Graham, makes it possible for silos to be made larger in diameter without the danger of loss of silage from spoiling when the stock fed are too few to consume enough of the surface silage.

His discovery is simply sprinkling the surface of the silage with two or three buckets of water once a day. In connection with this precaution Mr. Graham takes out two feedings of silage at a time; that is, when the silage is taken out for the evening meal the car or other silage container is again filled for the morning meal.

The next morning two or three buckets of water are sprinkled over the silage in the silo to reduce the temperature, thus preventing overheating and spoiling of the silage.

By this simple plan Mr. Graham has successfully fed as few as thirteen head of cattle from his oblong silo 11x17 feet, during the hottest summer months.

In June and July, 1913, only 36 inches' depth of silage was fed in thirty days, and the silage thus handled remained in good condition for safe feeding throughout that period.

Mr. Graham is careful, when removing the silage, to loosen up only to the depth required for the day's feeding, thus keeping the surface hard and level.

By taking advantage of this plan, silos ten feet in diameter can be safely used for feeding dairy herds as small as six or eight cows, even in midsummer.

In Horse Heaven

IN HORSE heaven the load in hot weather is made light.

The driving is slow.

The horse is watered very frequently if he is kept moving.

After he has had his evening's hay he is watered.

He is sponged wherever the harness has marked him.

His feet are bathed, but not his legs.

If it is very hot he is sponged all over, with water in which has been put a little vinegar.

He is never made to wear one of those horrid bell-shaped horse hats.

If his stall is so hot that he sweats at night, he is tied outside, well bedded down.

Such a horse heaven may be established on almost any farm.

Hog Prices Will be High

[CONTINUED FROM PAGE 5]

a by-product of the oatmeal mills. Having purchased this fine meal by the carload, both for myself and the state institutions in Iowa, when we were raising hogs by the thousand, I say most unhesitatingly that I know of no better article for making a milky-colored and nutritious swill than this by-product.

Oatmeal is made from the best quality of oats, kiln-dried; and, in fact, this by-product is equal for feeding purposes to the best oatmeal, which, when properly prepared by thorough cooking, is one of the best-known foods for pigs.

Milk and kitchen swill can be added with profit to the meal prepared in the barrel for the hogs, but care must be taken to see that any additions that are made are sweet and clean.

Swill prepared as I have indicated should be of the consistency of cream, dipped from the barrel standing on the feeding floor into the troughs, and when there is a small shed for the salt and meal, and a supply of pure water at hand, it is a simple matter to prepare the swill and fill the troughs, the pigs being excluded from the floor until the troughs are filled.

No crowding of pigs, no spilling of swill, in fact every part of the work reduced to a system, with a regular hour for feeding every day, preferably immediately after dinner on the farm, the midday meal, feeding ear corn or shelled corn soaked morning and evening, are the proper feeding methods.

In weaning the pigs, I have found shutting the sows in a small enclosure, and feeding sparingly with corn or oats, preferably the latter, and an abundant supply of pure water, will in a short time stop the milk supply, and by having an opening in the enclosure, that the pigs can enter at will and nurse the sows, there will be no danger of swollen and inflamed udders.

This method is much preferable to the common practice of confining the pigs and allowing the sows the range of the pasture, which increases the flow of milk when the object should be to dry up the milk flow of the sow, which can be done by furnishing a light diet of dry food.

In the meantime the pigs should be fed liberally, and as the milk supply from the mother becomes less and less, the pigs having an ample supply of palatable and nutritious food, weaning is an easy matter. The sows can soon be liberated in the full assurance that the pigs will not molest them.

After weaning, the method here indicated should be continued with the shotes intended for sale at ten to twelve months of age, gradually increasing the corn diet, and bringing them to the new corn in the fall gradually.

The filthy habit of feeding corn on the ground to hogs, even in dry weather, ought to be abandoned. Hogs should not be compelled to consume with the corn a part of their own excrement. When I see the conditions in which hogs are often kept, I do not wonder that there is disease among them, and that their owners do not prosper.

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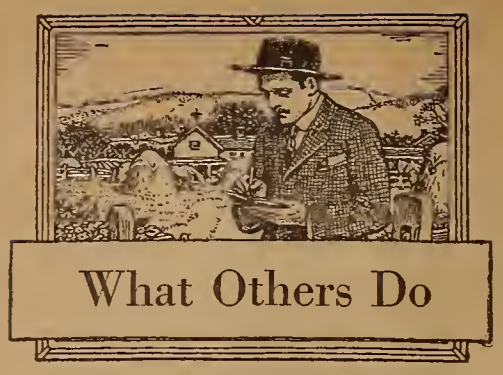


What Others Do

Repair Human Machinery

By B. Millrood

THE human machine needs repairs and an overhauling every year as the farm machines need. The physical condition of every farmer should be normal before any special work begins. Loss of time during the busy farm season, due to ill health, is expensive.

Farmers should have their eyes, teeth, feet, hands, and muscles examined carefully. Eye-strain, toothache, sore feet, and strained muscles are many times due to lack of proper attention.

Many farmers suffer from photophobia, a sensitiveness to light. This is caused by the reflection of sunlight on the ground and the strain thrown on the eyes in an effort to overcome the sensitiveness by adjusting the lenses of the eyes.

Warm water and massage will relieve pain due to sun-glare and eye-strain

Bathing the eyes with hot water several times every morning, and rubbing the forehead above the eyes in a circular motion with the fingers, will relieve photophobia in many cases.

Treatment for neuralgia includes rubbing the back of the neck from the center upward toward the back of the head, and applying cold water to the parts massaged.

Cold water and massage will relieve neuralgia in many cases

Do not try to relieve eye strain due to sunlight by using colored glasses. This causes the retina of the eye to be strained more.

Photophobia will disappear if the eyes are examined, and fitted with tinted lenses. Massage will do much toward enabling the eyes to stand much glare and strain without pain.

Squirrel-Tail Dollars

NORTH DAKOTA has a bounty law paying two cents for ground-squirrel tails. One Bottineau County farm owner supplied himself with three ounces of strychnine alkaloid at 80 cents an ounce, ten cents' worth of saccharine and starch, which preparation was mixed with about two bushels of oats. He then got busy poisoning the hordes of ground-squirrel pests that were laying waste his crops. Three days were required to distribute the poisoned bait in the holes of the squirrels, but the work paid well. The boys afterwards harvested 1,000 dead squirrels, the tails of which brought in $20 in bounty money.

For three days' labor distributing the poisoned bait and the outlay of $3.50 cash the bounty money returned good wages, to say nothing of the better crops that will be harvested as a result of killing the squirrels.

World's Deepest Wells

THE deepest well in the world is in a coal field in Germany. It is 7,350 feet deep. The second deepest well is in the United States, 15 miles west of Pittsburgh. It is 7,174 feet deep.

Four other wells in the United States are each over a mile deep. One of the most interesting wells in the world is in western China. It is 3,600 feet deep and was drilled for petroleum with a cable made of strands of rattan.

The Busiest Engine

"YOU can't beat the 1½-horsepower size as a first engine for the man engaged in general farming. At least that's what we're selling the most of, and farmers know pretty well what they want."

Such is the opinion and the experience of a high official in a concern engaged exclusively in making gas engines.

"And this is why," he added. "A 1½-horsepower engine will do a greater variety of work than any other size, and is the smallest practical size for farm use. It will do a great range of one-man work, such as turning grindstone, churn, corn sheller, cream separator, and all work in that class; and besides will run a small electric lighting plant or irrigating system. Mind you, it does all these things, not simply one or two of them. I have yet to find the man who has enough work to keep such an engine busy all the time. And with good care it never wears out. Of course there are other excellent sizes, but for the man who doesn't know just what he wants and who wants to get the greatest returns from a small investment, he won't make a mistake on the 1½-horsepower size."

In other words, the small engine will do the greatest number of odd jobs that have been done in the past by man or woman power. Of course there are plenty of jobs it can't do.

States Feed Themselves

MISSISSIPPI will grow somewhere in the neighborhood of eighty million bushels of corn this year. Not much as compared with the crop of a corn-belt State, but quite enough to make a corn-belt farmer prick up his ears when it is considered that in 1907 the State grew only 28,000,000 bushels.

It isn't the horse that is ahead that is most promising, but the one that is coming fast from behind. And the South is not coming from behind in corn alone.

Oats is distinctively a cool-weather crop—but Mississippi grew five times as many oats this year as last, and the average yield per acre is now eight bushels more than last year.

A Mississippi letter says: "This State is now pretty near the point where it is feeding itself so far as corn and oats are concerned."

The farm demonstration work of the late Seaman A. Knapp gave the start away from the one-crop system under which cotton was sole monarch, and this start is being followed up in Mississippi under the lead of H. E. Blakeslee, commissioner of agriculture, with his "Grown in Mississippi" association.

The other Southern States are doing pretty much the same thing.

More Lost People

GEORGE COATS left Alamo, Tennessee, in 1886, leaving his baby girl. She now lives in Arkansas and will be glad to hear from him or his relatives.

HENRY HARRISON was last heard from in Paris, Tennessee, in 1879. He has blue eyes, light hair, fair complexion, height 5 feet 10 inches, and is now about fifty-five years old. He has a scar over right eye. Who can furnish information concerning him?

WILLIAM HIPP, commonly known as Willie Hipp, has been absent from home for some five years. He is rather short, has black hair, black eyes, dark complexion, and was last heard from in western Texas. His parents, who live in Alabama, are anxious to hear from him or from anyone having met him.

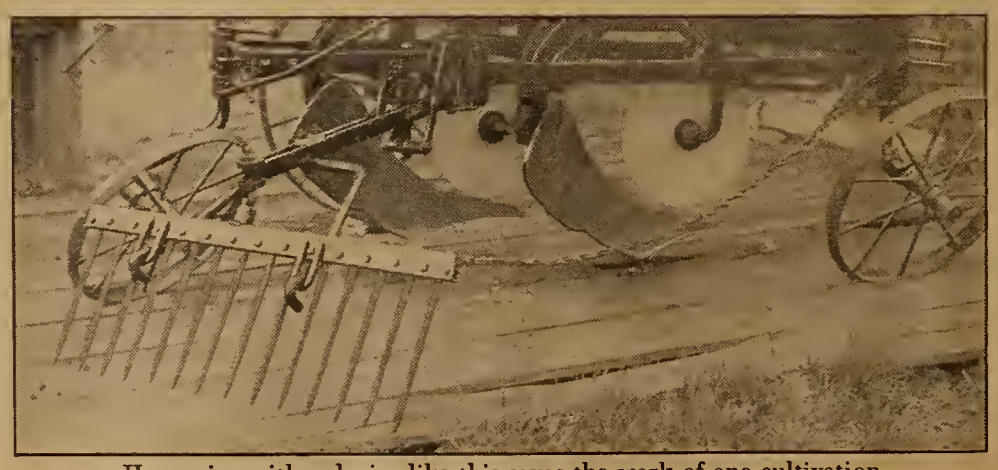
Address your replies care of FARM AND FIRESIDE, Springfield, Ohio.

Concerning Plow Harrows

THE picture shows one of several good harrow attachments for plows. The chief advantages of harrowing when plowing are the saving of moisture and labor. It saves at least one subsequent harrowing. The freshly turned, mellow clods melt away under a plow harrow, whereas by the next day they would have become dry and hard.

It also creates at once a soil mulch that prevents evaporation. Most plow harrows have adjustments in several depths, so you can regulate the depth and the slant—in other words, the draft.

But you can also do good work by simply hitching a single section of an ordinary spike-tooth harrow back of the plow. The chief drawback of this plan is the increase in draft. With a plow harrow the plow supplies the weight, and the increase in draft caused by the harrow teeth dragging in the soil is small.



Harrowing with a device like this saves the work of one cultivation

Garden—Orchard

Plant a Tree this Fall

By R. M. Archer

TWENTY-FIVE DOLLARS would plant and care for at least five elm trees for a ten-year period. It is a moderate estimate to say that, at the end of the second year, a building lot would be worth a hundred dollars more for their presence. At the end of twenty-five years no man who owned the land on which they stood would take a hundred dollars apiece for them. Plant an elm or a maple near your home this fall, and look upon it as a hundred-dollar endowment policy, maturing in 1940, with no premiums after the first year.

No one thinks of shade trees as a profitable crop, and yet, of all vegetable growth cultivated by the hand of man, none renders a more generous return. Of course the man who plants a maple or an elm rarely lives to enjoy its shade, and this thought, among us thrifty Yankees, is sufficient to keep us from overplanting our premises with slow-growing trees.

We are apt to demand more for our effort than the pleasure and comfort of the next generation. We should understand, however, that shade trees are much more than monuments to make our name respected by our grandchildren. They really increase at once the value of the homestead upon which they are set out. The returns in this respect are prompt and constitute a very tangible asset.

ANY grove of trees makes a good windbreak, but evergreens are twice as good as any other—when you get them high enough. And what is so pretty as a grove of evergreens about a farm home in winter?

CONCENTRATED lye scattered in the runs of rats and mice will kill them or drive them away. It is an excellent thing to put where the rodents will have to dig in it if they carry out their digging program.

Experimented: Found Out

By L. C. Campbell

DURING the last year or two we ranchmen and farmers in Fremont County, Wyoming, have been getting some idea as to the real value of nitrogen in our soils, which are naturally fertile and very rich in phosphate and potash. While our crops have been making satisfactory yields with comparatively little attention, we have been slow to realize the much greater possibilities in yields per acre by proper crop rotation and the addition of abundance of humus.

Last season, instead of following the usual method of planting potatoes in the same old patch, I plowed up a third of an acre of alfalfa ground in the corner of the meadow and planted the potatoes there—just over the fence from the old patch. This old patch had yielded at the rate of about 8,000 pounds per acre during the previous season.

On the alfalfa ground the potatoes received two irrigations and one cultivation. They yielded 8,000 pounds, or at the rate of 24,000 pounds per acre.

As it happened, one of our neighbor ranchmen planted seed from the same source but on old potato ground which lacked humus and which had not produced a legume crop. The yield was very light, and before the winter was over they bought potatoes from our bin for their family use.

For another experiment I planted some different varieties of wheat on a piece of land that had formerly been a bedding ground for sheep. On a one-tenth-acre plot John Brown wheat produced at the rate of 69 bushels per acre; on plots of similar size Marquis wheat produced at the rate of 60 bushels per acre; and Minnesota Fife No. 163 wheat produced at the rate of 53 bushels per acre. The yield on ground in the same neighborhood, and not well supplied with humus, is generally about 30 bushels per acre.

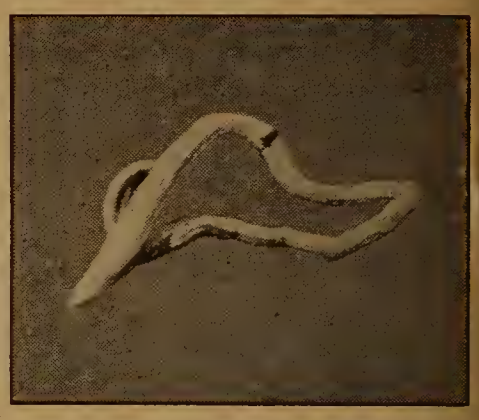
I find that ground containing plenty of humus conserves the moisture and requires much less irrigation water than does other adjacent ground in producing a crop.

This little demonstration has given me an object lesson in what may be expected of our soils and crops if we only supply the humus or nitrogen with crop rotation.

Queer Snake Cucumber

By C. L. Edholm

CALIFORNIA grows strange products at times, but nothing more remarkable than cucumbers like that shown in this photograph. This type of cucumber is frequently a yard in length and assumes all kinds of fantastic shapes. This particular one resembles a snake in its windings, and was exhibited in a store window in Los Angeles with a couple of artificial eyes that gave it a



weird and dangerous appearance. This variety is edible and is excellent for salads.

New Seeding Machinery

[CONTINUED FROM PAGE 3]

course, and narrow spacing helps small plants of slow growth to shut out the weeds. But the principal grains get along all right when drilled eight inches apart. One ingenious single-horse drill has an adjustment by which the distance between rows can be made six, seven, or eight inches at will. We don't know as much about this problem as we shall in a few more years. A partial answer to the man farming the eight-inch space is that a horse corn planter which scatters the seed in the hill gives a better crop than does the hand planter which crowds the stalks together in a hill.

Besides the regular seeding machines there are some interesting cultivators and harrows with seeding attachments. One of these is an alfalfa cultivator. The operator rides the machine, and with a convenient lever can instantly start and stop the seeding device.

Another concern makes a combination disk harrow, grain drill, and broadcast seeder. This looks a good deal like a disk harrow, having seed boxes over each section. The drill pipes can be lowered and raised at will. It is intended chiefly for sowing wheat in hard ground after harvest. A medium-sized machine of this sort sells for $40. The seeding plate is run by a chain which gets its power from the disks.

Another new tool is a disk harrow with drill attachment that throws the dirt all one way. This implement leaves no hollows or ridges and is carried on wheels. It sells for $55 in the medium sizes.

A development which will gladden the hearts of man and horse alike is the advance of scientific greasing—oiling—lubrication. One of the improved drills is oiled in this way. A felt-lined reservoir is provided in the hub of the disk so you can pour in two tablespoonfuls of oil and it gradually works through the felt to lubricate the bearing, which is dust-proof. One oiling is good for a season.

Another piece of good news is the beginning of a campaign to abolish the set screw. "There's nothing wrong with the set screw," one designer said, "as far as the principle of it goes, but in practice it's always giving trouble. Most set screws are made of hardened steel, which easily rusts. Then when you go to loosen or tighten them they may twist off. They harbor dirt and grease, and we're fighting the set screw hard, going so far as to make considerable changes in design." That little set-screw speech shows how closely manufacturers are watching the details of their business.

E

Drive a Tractor

WHEN it's ninety in the shade,
Drive a tractor.
When the seed bed must be made,
Drive a tractor.
For its hamestrings never burst,
And when dog days are the worst
It will hardly have a thirst;
Drive a tractor.

When the ground is hard and dry,
Drive a tractor.
It will plow when horses die;
Drive a tractor.
Laughs at hornets, flies, and bees,
Never known to have disease,
Saves you veterinary fees;
Drive a tractor.

Corncrib Elevators

THE old way of building a corncrib was to make it long, narrow, and low. It had to be low enough so you could fill it with a scoop from the wagon. But such forms of corncribs are now more the result of habit than of careful planning and economy.

A little figuring will show that a building costs less per cubic foot of capacity when compact instead of strung out. That is why long low barns cost more than barns more nearly square, and also why bungalows are usually more expensive than two-story houses of equal number of rooms. Elevator outfits are now coming to be used for filling corncribs and granaries. Consequently you can build higher and more economically.

Though it may seem improbable, you can actually save enough in building a good-sized corncrib or granary to more than pay for the elevator. Portable corn elevators that will carry the grain to the top of the crib can now be had for less than $100. As ordinarily made these elevators will easily fill corncribs 24 feet high and save all the work of scooping, besides doing the work more quickly. The metal elevator seems to be the most popular, as it neither swells nor shrinks with the weather, and when made of heavy steel is thoroughly durable. Built-in elevators have the merit of being protected from the weather, and consequently will last as long as the building. They cost a little more but make up for that by requiring no shed room.

Two Lime Pointers

IF CORN has small, long-jointed stalks and delicate leaves, with a poor ear, the land probably needs lime.

Lime added to a clay soil makes it more porous to water, but sandy soils are improved by becoming more compact when limed.

Growing New Barleys

By Frank A. Spragg

TWO new varieties of winter barley have been produced by the Michigan Experiment Station at East Lansing, Michigan. The varieties are Derr Winter and Michigan Winter. These barleys originated from several thousand samples of barley planted by the Michigan Station in the fall of 1909.

No strains of winter barley would endure the winters north of the Ohio River until 1909, according to the best records I have found.

Six varieties of barley were sorted from the many grown in 1909-10 and 1910-11, and were planted in the fall of 1911. The winter of 1911-12 was a severe one. Three of the six varieties were winter-killed. A fourth variety was not considered as profitable as the two remaining varieties.

The average yield of Derr Winter and Michigan Winter for the years 1913 and 1914 was 55.6 bushels an acre. The best yields of spring barley for the same seasons were 40 bushels an acre.

Twenty pounds of each of these varieties were sent to forty farmers in different parts of Michigan last fall. The object was to learn which one of these varieties would be most adaptable to Michigan conditions, and if a different variety of barley would be favored by different conditions.

The Michigan Winter variety is giving but little greater satisfaction than the Derr Winter. These barleys are not a success in the upper peninsula of Michigan because they have been injured by the winter temperatures.

The Michigan Experiment Station has six acres each of Michigan Winter and Derr Winter barleys. The heads of the grain are drooping, and some of it is beginning to turn as this is written, June 25th.

I think there is no question that the barleys will yield more than 50 bushels an acre this year. Both of the varieties are bearded.

The 1914 crop of Michigan Winter and Derr Winter grown at the Michigan Station were harvested June 24th. Though both varieties of barley ripen earlier than any other grain crops in Michigan, the difference in time is not sufficient to favor the growing of crops following them the same year. Of course the land can be fitted and put in any of the fall crops, or the land can be prepared and planted to alfalfa, vetch, or rye in August.

The Housewife's Club

Most every woman has originated some device to make the housework easier. Write and tell us about your conveniences. Aside from making a little pin-money, you will be helping others; and that is what the Housewife's Club is for. We will give $2 each month for the best description and rough sketch of a home-made household labor-saving device, and $1 for the next best or any that can be used. We will also give 25 cents each for good kitchen hints and suggestions. Also 25 cents each for tested recipes that we can use. Letters containing these facts should be written in ink, on one side of the paper only, and each item must contain not more than 250 words. We suggest that contributors retain copies of their contributions, as none can be returned. Address, Housewife's Club, *Farm and Fireside*, Springfield, Ohio.

Stuffed Eggs—Mash the yolks of four hard-boiled eggs with a teaspoonful of curry powder and about a tablespoonful of mayonnaise dressing. Minced veal or chicken mixed with the grated yolks of hard-boiled eggs, seasoned slightly with salt, the whole moistened with cream, makes another splendid filling. To serve, form the mixture into balls about the size of the original egg yolk and set them in circles made from quarter-inch slices of the whites of the eggs. Serve on crisp lettuce leaves.

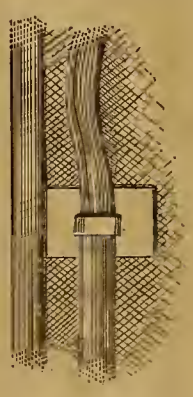
B. B. S., Florida.

Marbled Potatoes—Beat three cupfuls of mashed potatoes until very light with butter, salt and cream to suit your taste. Beat one-half cupful of strained tomato juice into the yolk of an egg until the mixture is well blended, and stir into one half of the potato you have prepared. Whip the white of the egg to a stiff froth and work that into the rest. Butter a baking dish and put the potato into it, alternating the light and dark mixtures. Sprinkle fine bread crumbs over the top, and bake about twenty minutes in a moderate oven.

O. W. N., Kentucky.

Turnip Croquettes are rather fussy, but might be used once in a while for novelty. To two cupfuls of mashed turnips add the well-beaten yolks of two eggs, salt, pepper and paprika. Let this get very cold, then roll into balls, roll in fine crumbs, then in beaten egg, again in crumbs, and fry in deep fat.

A Trimming Guide—When sewing on rows of braid, cut two slits in a piece of cardboard the same distance from the edge as you wish the rows to be apart. Run the braid through these slits, then slip the cardboard toward you as you stitch, always keeping the edge touching the last row. This does away with the necessity of basting the braid for the machine-sewing.



ETHEL W. CALDWELL.

Length of the Skirt—For the busy housewife who must do her own sewing, the following will prove an easy and very satisfactory arrangement for hanging a dress skirt upon herself. Slip the skirt on, then taking a yardstick place one end upon the floor. Hold the stick vertical. In the center of front of skirt and at the top insert a pin. Then move the stick about six inches to the right and repeat. Repeat until you have pins all the way around. Now spread the skirt on a flat surface and, beginning in front, again place the upper end of the yardstick as much above the pin as you wish the skirt to clear the floor. Place the pin at bottom of yardstick. Repeat this operation around the skirt, when all that remains is to trim the skirt evenly from one pin to another. If this is carefully done a skirt cannot fail to hang perfectly.

JULIANA JOSCELYN.

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Name given by Postum Co., Battle Creek, Mich.

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(Original letters have been submitted to Pub. of this paper.)

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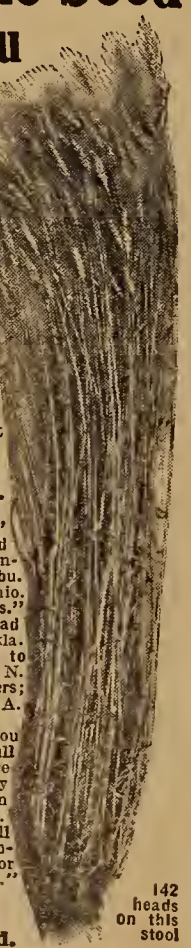

142 heads on this stool

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For the Children

No. 2735—Boy's Blouse Suit with Straight Trousers

4 to 8 years. Material for blouse in 6-year size, one and three-eighths yards of thirty-six-inch; for trousers, three-fourths yard of forty-four-inch material. The price of this pattern is ten cents

No. 2736—Girl's Empire Dress with Kimono Yoke

2 to 8 years. Material for 2-year size, two and one-fourth yards of twenty-seven-inch material, or one and five-eighths yards of forty-inch material, with four and one-half yards of insertion. The price of this girl's dress pattern is ten cents

No. 2819—Child's Dress Tucked to Simulate Yoke

6 months, 1, 2, and 4 year sizes. Material for 2-year size, two and one-fourth yards of thirty or forty inch. Price ten cents

No. 2820—Child's Kimono Dress with Tucked-Band Trimming

2, 4, and 6 year sizes. Material for 4-year size, two yards of thirty-inch material, or one and three-fourths yards of forty-inch. The price of this dress pattern is ten cents

These four designs cover home and party wear for the very little girl, and show a good play suit for the boy. Order by number as explained in the next column.

For Yourself

No. 2573—High-Waisted Wrapper: Kimono Sleeves

32 to 42 bust. Material for 36-inch bust, six and one-fourth yards of twenty-four-inch material, or three and three-fourths yards of thirty-six-inch material, with one-half yard constrasting material. The pattern is ten cents

No. 2689—Princesse Petticoat Perforated for Short Combination

32 to 46 bust. Material for 36-inch bust (Princesse petticoat), seven yards of twenty-two-inch material, or three and one-half yards of thirty-six-inch. Width, one and three-fourths yards. For combination, four and one-half yards of twenty-two-inch material, or two and one-fourth yards of thirty-six-inch. The pattern is ten cents

No. 2816—Garden Smock and Hat

32, 36, and 40 inch bust. Material for smock in 36-inch bust, two and one-eighth yards of thirty-six-inch material; for hat brim, five-eighths yard of thirty-six-inch material, with five-eighths yard of contrasting for crown of hat. Price of this smock and hat pattern is ten cents

The garden smock is also suitable for farm work, and the wrapper bespeaks indoor comfort. The princesse slip looks well under light dresses, and is also adaptable for use as a combination.

Each pattern is ten cents. Send the order, writing your name and address clearly, to Pattern Department, FARM AND FIRESIDE, Springfield, Ohio.

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How Judith Cured Herself

Mother and Father Planned, but Their Plans Failed

By ANNIE HAMILTON DONNELL

Part II

BEING October, Josephine and Rem junior were both away, just beginning a new year of work. Fortunately this was a pretty good week for Father to be away; there was a little lull in the outside work before the apples came to their supreme condition of marketable value. A week or ten days later he couldn't be away, jury or no jury. As Judith said, those trees were the apples of Father's eyes. And this year of all years.

The week proceeded on its way, humdrumly to old Hannah and Judith, but with a pleasant little flutter of excitement to Father and Mother at the county seat. In the midst of it all, out of a blue sky, descended direly upon Father and Mother a bolt of Fate. The unexpected and the dreadful happened: Father came to grief under the wheels of a huge automobile rounding a corner suddenly. He and Mother were crossing the street, Mother a little ahead, directly in the path of the big machine. It took but an instant for Father to hurl the slight figure aside out of danger, but there was no instant left to hurl himself. The great car attended to that for him.

Judith read her letter with rapidly whiteuing face.

"He's all right, dear—Father's all *right*. He says he's just as alive as he ever was. He says for me to tell Judy so. Only he's so broken, poor Father! It's his leg—in three awful places. He insists he can be taken home, but he can't, Judy. The doctor himself told me unless he had skilled care he would be likely to be lame always. Father is worrying terribly about the apples. He meant to get a special price out of Al Peters this year, with the crop so heavy. But now—well, he says you must do the best you can, you and Hannah. There's no other way. If Al had any heart—but he hasn't. He'll pretend it isn't much of a crop. Oh, Judy, Father was so pleased over that beautiful crop! Some of the Spies and Baldwins are so *big!* But, there, what are Spies and Baldwins to poor Father's legs! He looks so white and patient—Judy, you'd cry! And all the time it might so much better be my legs. It would have been, too, if Father'd let it."

Judith sobbed over her letter. Through the midst of her tears she could scarcely read the postscript—there were always postscripts to Mother's letters.

"P. S.—Father says tell Judy not to mind about the apples that Al won't take—the windfalls and those. He would probably have taken them to the vinegar factory himself but you couldn't do it. They aren't of much account anyway."

"'You couldn't do it'—I couldn't even get windfalls to a vinegar factory!" Judith cried. Her cheeks reddened slowly, and curious little flames crept into her eyes. She sat very still for a long time, until old Hannah came to find her. Judith told her sorry news and then rose to her feet. Now her cheeks were white again, but the flames burned on in her eyes. Some change in the girl held old Hannah dumb before her; she went back to her kitchen mumbling to herself. Old Hannah felt a little afraid of this Judith.

Quickly the girl got her paper and pen and wrote:

"Don't let Father worry—don't *let* him, Mother! He mustn't! Don't you think you can make him believe I'll take care of things here at home? You try, Mother; *try!* Al Peters sha'n't get those apples out of me for nothing. Father sha'n't lose his beautiful crop if I have to—if I have to peddle it round out of a wheelbarrow! You kiss Father for me and say, 'Just this once, trust Judy.' Mother, you tell Father I love him."

After dinner Judith got out old files of Father's farm papers and hunted through them. She harnessed Old Mortality into the beach wagon and drove down to the village library and pored over other papers. She consulted books in the stacks and found the new book referred to in one of the magazines and the particular chapter in the book that she wanted.

FOR a week Judith Swift did strange and unexpected things, of which the strangest and the most unexpected was the scornful rejection of Al Peters' offer of a "lump sum." Judith would have none of him. To the last he expected her to yield, but to the last Judith stood firm. The apples were worth four times what he offered—five times as much. If he would not give five times as much, said this Judith of scorn, then he might as well go. And Al Peters went.

"Land, now what you goin' to do, Judy?" wailed old Hannah helplessly. "All them apples on the trees an' your pa on his back! What you goin' to *do*, I'd like to know?"

"I'm going to sell them and get what they're worth," this calm young Judith said. "I've got my plans all made. To-morrow I'll be gone all day, Hannah,—to the city. I'll get up early and get my own breakfast. Don't you get up."

"I do' know but I'll be sick o' bed," mumbled Hannah, "what with these strange doin's! I do' know but if your pa knew what's goin' on 'twould break his other leg—" the mumbling trailed on unheard, for Judith was gone. She hurried down to the lower orchard with a basket on her arm and made a round of the best trees. Her basket, when she had finished, contained fair samples of the noblest of the fruit and samples of the medium, and even of the "seconds," though it was not an orchard of seconds this year. It was an orchard of firsts and double-firsts!

The next morning, after an early breakfast, which grumbling old Hannah insisted on preparing, Judith took her samples to the nearest city, which was something over forty miles away. There she spent a weary but triumphant day.

"Land, I guess you're tuckered—you look it!" old Hannah said when Judith returned.

"My feet ache, but my soul doesn't," laughed Judith. It was queer how easily she laughed to-night. Her eyes shone in her tired face.

"I've had a beautiful day," she insisted. "And the apples I've given away!"

"Give' away!" shrilled the old woman. "I guess at that rate your pa'll be rich."

"Oh, I hope he will—I *hope!*" Judith cried ardently. "He shall be, Hannah."

She wrote letters, visited the box factory in the next town, engaged hands for her harvesting, and generally flew about like a young wild creature. She barely stopped to sleep or eat. Old Hannah fairly wrung her hands at the "doin's."

"What's all them boxes doin' out there, piled up round?" she demanded curiously. "An' my land, if there don't come that Phelps boy with another load of 'em! I never see so many boxes."

"Well, you'll see more still now," Judith laughed, preparing to rush out to superintend the unloading of the fresh load. "They're my barrels, Hannah, to pack the apples in. Poor dear Father's apples that he's worrying over—he's going to get the best price that I can coax out of Peake County. I've got an ambition at last." She was off, but presently came rushing in again on a new errand. Hannah's bewildered old face caught her eye.

"Why, Hannah, you poor dear! You look as if you thought I was crazy."

"You be," groaned Hannah.

Judith stopped short in the middle of a whirl.

"There, poor dear," she said, "I'll sit straight down and enlighten you—you sha'n't suffer any longer. You know Al Peters wouldn't make a half decent offer, don't you? Well, I wasn't going to give him Father's nice apples. So I said I'd sell 'em myself. I took samples to the city—oh, Hannah, I got such bea-ooo-tiful orders! I'm going to send them in boxes instead of barrels and get as much, too,—for about a third as many. I'm going to pick every last apple by hand—"

"Set up nights, I suppose, an' pick for dear life!"

"For Father's dear life. But I sha'n't sit up nights. The Coombs boys are going to help pick, and so is Elnate Phelps. They're all careful and cheap, and I don't know which is the most valuable asset. You can come down with us when we're ready, and help sort—wanut to? We'll work like beavers, but we can have fun doing it. I shall have the apples sorted into bigs and mediums and smalls—no lumping 'em all in together. That isn't efficient. Efficiency, Hannah, that's our slogan. You wait till you see Father's apple checks. Now you know all about it and you needn't worry any more, poor dear. It isn't 'going crazy' to have a little spurt of efficiency and progressivism and science and a few other things like that. I'm embarked on a smooth sea, and I think I know how to row the boat, so you needn't draw a long face and expect me to drown. Father's *got* to trust me because he can't help himself, and you might as well do it too. Good-by!" She was off once more.

The Coombs boys came, and Elnathan Phelps, and Hannah with considerable grumbling added her lean and wiry self to the little corps of workers. Tree after tree was stripped by hand, the fruit painstakingly but nimbly sorted and the small, neat boxes packed and stacked in piles ready for hauling to the station. The very largest and most magnificent apples of all Judith insisted upon packing herself, and every one was wrapped in tissue paper, orange-wise.

"These are my gold nuggets," she explained gaily. "They're going to be on parade in fruit-store windows and make everybody's mouth water. I saw a window decorated with apples when I went to the city, and I went into that store and told that man he didn't know a really sizable apple by sight—never was introduced to one! I out with one like these and said, 'Let me make you acquainted'! Well, he agreed to take all I'd send of *that* size. There'll be two dozen boxes of the Spies, and I hope two dozen of the giant Baldwins." Her nimble fingers were flying as she talked. "I'd wrap every single boxful in tissue paper if I had time. I believe 'twould pay. And have the name of the farm printed on the wrappers, too."

"What you calc'latin' to do with the runts?" inquired old Hannah, busy with her sorting. Old Hannah was getting interested in this remarkable method of harvesting apples. In her heart she was proud of the capable young head harvester, but she did not intend to say so.

"Runts? I don't intend to have any runts!" Judith said loftily. "Of course there will be some—er—undersized ones, and those I shall send to the canning factory at Sabin Falls. I got a letter to-day saying they could use any amount. They offered good prices, too, for runts—I mean undersizes. Then what windfalls there are I'm going to haul to the vinegar factory myself, to save hiring anyone. I can get sixteen cents a bushel. Oh, not an apple shall I waste!"

"Where you goin' to get your pies?" Hannah quietly interpolated.

"My what?"

"Pies 'n' apple sass all winter."

Judith's half-wrapped giant rolled out of her hands into the grass.

"Mercy!" she cried. "I never thought of *us!* I suppose I'll have to save out a few. Two barrels—well, maybe three. That's all. We can't afford to eat firsts. But the second-bests are beauties this year."

FOUR weeks in the hospital had succeeded in wiping off all the good country color from Father's face. He and Mother started homeward rather feebly and dispiritedly. They were feeling pretty poor after all the extra expense.

"Guess Judy'll have to wait a spell for that treatment, Mother. Kind of mean, too, for me to get it all. *Pig!*"

"Father, you stop! You're a dear!"

"Well, 'deer', then, an' not pig if you say so. But I do feel mighty selfish, Mary. I can't help it. All that money wasted on one leg o' me!"

"Wasted? Can't you walk on your leg? Well, maybe that's worth spending a fortune on."

"Maybe—if you say so. Only, poor Judy, without her treatment! She never mentioned what Al Peters gave, did she? I don't wonder! But we're not going to blame Judith, woman dear, not one iota! You couldn't expect a girl to drive bargains—not a Judy girl anyway."

"No, not a Judy one," sighed Mother tenderly. How she did want to see that Judy girl! "We knew all the time she hadn't any business talent, but you needn't tell me she hasn't done her best, Father. When I get hold of her again—"

"When *I* get hold of her!" Father cried.

But Judith had already had her "treatment." She had found an unexpected store of energy and talent laid away within her, and had hauled it forth and put it frenziedly to work. She had come face to face with an astonishing new Judith that she could honestly respect. Now for Father to respect her.

She met them at the station, but it was not until after tea that she made her report to Father, perched on the arm of his chair, her cheek against his bald spot.

"Al Peters never paid a cent for the apples," she introduced the subject. Then in a moment the secret was out and Judy's generous checks and a fat little roll of bills were laid before Father. She had prepared, too, a carefully drawn-up plan of two new plots of land for new orchards, with parallel lines of tiny dots for prospective little trees. How Judy had pored over that little map and over an up-to-date article in a magazine written by One Who Knew, how Judy had longed to the tingling ends of her suddenly ambitious young fingers to "break up" that land and plant those little trees before Father came! But she had sighingly confined her energies to that pen-and-ink plowing and planting. Not too near had Judith "planted" her tiny dots—indeed, no! Father's trees now were all too close together—she had discovered that. The young, new trees must be two rods and a half apart—she wouldn't let Father plant 'em an inch nearer. Poor dear old Father, to come home to be bossed! But wasn't she going to help him—wasn't she? The help that Judy was going to give bubbled and sizzled now in her veins; she could hardly wait.

She laid all her papers and the money she had worked so hard to earn for Father before him and held her breath. Would Father approve?

Did Father approve? Judy never remembered exactly the words he said or exactly how many times Mother kissed her, but she remembered their dear lighted faces. It seemed to Judy that they even illuminated the room—anyway the happy little room of her soul.

"Mary! Mother! Woman dear! will you come here?" Father cried excitedly. "Will you look at what our girl has done? I tell you I've added up—she's made more out of the apples than we ever dreamed of getting. She's more'n doubled, Mother. Look for yourself and see what she's done, and what she's going to do," added Father, the little pen-and-ink orchards in his hands. A laugh wrinkled the corners of his eyes, but Judy liked the looks of that laugh.

"*We*, Father! Oh, please, *we!*" she pleaded.

"What *we* are going to do," amended Father. "We're going to put in new trees—heaps o' new trees. All these little dots, Mother, see? Swift and Company's Orchards! Judy, you young trump!"

"Then," whispered Judy, her lips to Father's ear, "then you don't want to throw me away now?"

Perched on the arm of his chair, her cheek against his bald spot, she said with glee, "Al Peters never paid a cent for the apples"

Petey's Harvest

How Victory in the Cornfield Kept the Boy on the Farm

By WILLIAM G. CHAPMAN

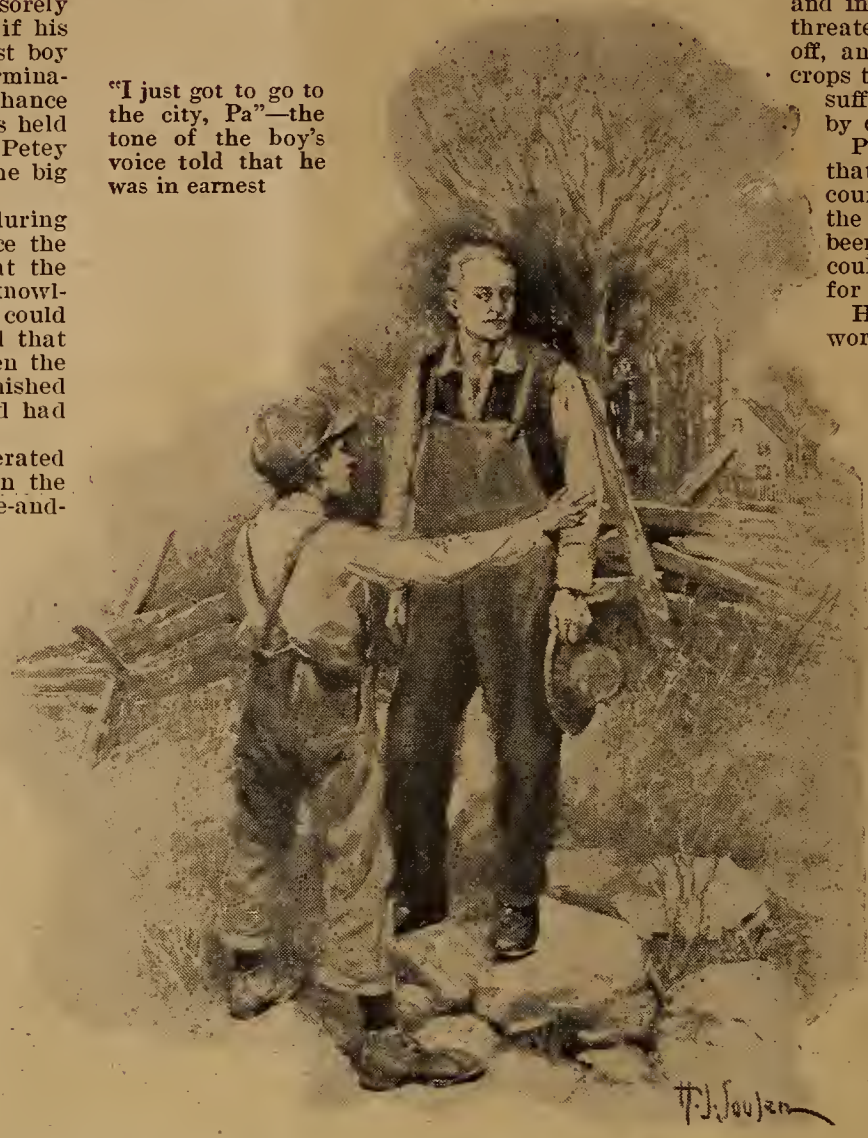
BIG, pleasant-faced Sam Schoonmaker was sorely perplexed. How could he run the farm if his "right hand," as he often called his eldest boy Petey, persisted in carrying out his determination to go to the city to seek there the chance that was denied him at home? The family acres held prospects of so narrow a future that ambitious Petey had determined to strike out for himself, and the big city beckoned to him alluringly.

One hope his father had held to tenaciously during the past three years: Petey would not renounce the farm for the city if he could take the course at the agricultural college. Then with his acquired knowledge of modern scientific methods of farming he could do something worth while with the starved land that supported the family so meagerly. That had been the boy's cherished desire too, ever since he had finished his schooling at the village seat of learning and had started to be his father's "right hand."

"I just got to go to the city, Pa," Petey reiterated for the hundreth time. Father and son were on the edge of the side-hill pasture, repairing the stake-and-rider fence that had been leveled by a yoke of breachy steers. Pa Schoonmaker realized the finality in the boy's voice, and a deep sigh rose to his lips as his mind contemplated the changed conditions he must face with Petey's able help denied him.

"Well, Son," he said resignedly, "I won't stand in your way. But it shorely means a tarnation hard summer for me. It's mighty nigh impossible to get any good hands nowadays, with all you youngsters feelin' your oats and lightin' out for the city. We'll miss you, Petey, a hull lot." Pa Schoonmaker set his last "rider" in place and laid his hand on Petey's shoulder as he straightened up. "Leastways, you'll get to be a big man down there some day, Petey," he added hopefully, a light of pride in his eyes.

"It'll be best for all of us, Pa," encouraged the boy, abstractedly kicking a last vestige of the fast-retreating snow from the roots of a raspberry bush that nestled in an angle of the fence. "I just know I c'n get ahead down to the city, an' I'll be able to help you an' Ma a sight more'n if I stayed here f'rever. You c'n get one of the Tucker boys to help out, an' you'll never miss me."



"I just got to go to the city, Pa"—the tone of the boy's voice told that he was in earnest

But his father was in deep thought. He seemed not to hear Petey's last words, and not until they had reached the bridge over the "crick" that led out of the pasture did he speak. Then a half-doubtful but pleased smile deepned the network of fine wrinkles that seamed the tan of his face. "I got an idee, Petey," he began. "What say I let you take the seven-acre lot we just cleared and raise something on it a'tween the stumps, an' let you have what you make for your college course? I aimed to pasture it this summer, but the stock c'n get along right handy without it. What say, Petey, would you stay?" A wistful note crept into his voice as his eyes searched his son's face hopefully.

Petey's answer was decisive. "You bet I'll stay, Pa!" he ejaculated, gripping his father's arm delightedly. "You just watch me raise a smashin' big crop of corn on that seven-acre lot. I'd a hull lot druther stick to farmin' anyway, if I c'n learn to do it proper 'stead of grubbin' along like we do. I'm goin' to run ahead an' tell Ma."

The clock of Sam Schoonmaker's span of life had, seemingly, been set back several years when he reached the house. Ma Schoonmaker, dabbing happily at her eyes with her apron, met him at the settin'-room door, and a glance of new-found content and understanding passed between them as he entered.

With all thoughts of the city crowded out of his mind by the absorbing work of preparation for the "college crop of corn," as the family had dubbed it, Petey labored unceasingly at the preliminaries. The seed corn was carefully tested according to the new methods advised by the Department of Agriculture at Washington, Petey having sent for the bulletin and studied it until he could almost recite it from memory. A few kernels were taken from each ear and rolled in a thick cloth, a number being given to each group to identify it with the parent coh. This roll, moistened and kept in a warm place for two weeks, displayed, on being unrolled, the kernels in various stages of germination. The ears from which had been taken the kernels that showed sturdy endeavors to grow were carefully placed aside to be used in planting the crop, and the rest of the ears returned to the granary.

WHEN the frost was well out of the ground, Petey plowed and harrowed the rich virgin earth of the seven-acre lot, guiding the team between the stumps which remained after the last fall's clearing of what had been a timbered side hill.

"It's a durned shame we ain't just a quarter mile further north," Petey complained to his brother Normie, who strode beside the plow and occasionally "spelled" him at the handles. "If we were we'd be over the disputed boundary line between the two counties, an' I could try for the scholarship prize for the biggest crop o' corn raised by a boy on one acre. Wish the corn growers of this county would offer such a prize. I'd win it, I would, on this new meller soil! Then I'd have a pretty sizable sum o' money from the crop for a nest egg." Petey's eyes glistened at the thought of the possibilities if the Schoonmaker acres had only been situated on the other side of that contrary boundary line; then he sighed resignedly and brought his mind back to the business in hand of making the best of what offered.

The corn growers' association of the county adjoining on the north was more progressive than its neighbors to the south in its efforts to improve the local corn crop. Believing that the farmers could be convinced of the necessity for more intense cultivation, the association had been wise in its manner of impressing the advantage of this upon them. The association made the sons of the farmers its instruments. A prize of a scholarship at the agricultural college was offered to the boy who, following the modern improved methods of corn-growing it advocated, produced the biggest crop of corn on one acre, and the bumper one-acre crops that were sure to result would open the fathers' eyes to the value of scientific cultivation. It was too bad that the township of Horton Hill lay only a meager distance south of the county boundary line, a line that custom had come to recognize, though it long had been the subject of dispute.

PETEY'S thoughts persisted in returning to the golden opportunity that was denied him by an insignificant matter of geography. He pulled the team up with a jerk and turned to Normie.

"Tell you what, though," he burst forth in continuation of his thoughts, "I'm a-goin' to lay out an acre an' work it just like I was in the contest. I'll show 'em I could 'a' won if we'd been the other side of the line 'stead of this. Betcher I c'n do it."

Normie was sure he could, with all a small brother's belief, and Petey, with a new interest in his husbandry, slapped the lines on the horses' backs, and the plowshare once more cut smoothly into the rich forest mold and turned it over in moist brown ribbons across the field.

The plowing finished, the field was brush-harrowed until it had acquired a sufficiently loamy condition, and then was planted with the tested seed. Carefully the sprouting blades were protected against marauding crows, and when the corn had attained a fair growth it was hilled and cultivated during every spare moment left to Petey from his regular duties. It throve under his care, and the "contest acre" seemed likely to have given the boys in the county adjoining much concern had it been located a trifle farther north.

"It shorely appears like you'll have a bumper crop, Son," remarked Sam Schoonmaker to Petey, gazing with pleased and critical eye over the sloping field of waving, rustling green.

Father and son stood at the bars in the fence surveying the ripening corn that reflected gleaming emerald tints as the lowering sun cast its last mellow rays over the early autumn landscape. Petey was silent. He had had silent spells for several days, and this his father believed to be due to the sorrow and worry that lately had cast a gloom over the entire household. Little Herbie, the youngest boy, a cripple since babyhood, owing to an accident for which a careless nurse was responsible, was worse. He complained constantly of the "misery" in his back. It was a pitifully deformed little back that might be eased and strengthened if it could have the support of a brace—an expensive instrument of leather-padded steel—that the sorely beset father could not buy, with the drain of those three lean years still to be reckoned with. True, this coming harvest would be a fat one, but its proceeds would be far from sufficient to pay the debts that harassed him, including the mortgage payments and interest which were now long overdue. Disaster threatened unless this incubus was speedily cleared off, and it would take all and more of the season's crops to accomplish it. And so poor little Herbie must suffer and grow weaker and more querulous day by day with the "misery" in his back—unless—

Petey had been fighting his battle. Was it fair that he should give up the cherished dream of a course at the agricultural college? If he did, even the alternative would be denied him, for he had been given his chance, and having accepted it he could not in fairness to his father forsake the farm for the golden rewards of venture into the big city.

His long-nurtured ambition to forge ahead in the world, which now seemed possible of fulfillment through the opportunities that would come with a knowledge of scientific farming, was in sore conflict with the dictates of his warm boyish heart. Poor little Herbie—the thought of his suffering for lack of the needed brace, when so much money was promised by the yield of the seven-acre lot, could not be stilled. But was not the college education of supreme importance? With the affluence that would be the reward of his hard-won knowledge the entire family would benefit, and Herbie could have everything he needed or wanted. But that thin, childish voice ever arising in complaint of the "misery" sounded now in his ears.

A HALF-SIGH escaped him. His father looked down into his face quickly. Pa Schoonmaker's grave, kindly eyes seemed to question the lad's soul, but he said nothing and his scrutiny was withdrawn in an instant. Petey spoke: "Shucks, Pa, you don't think I c'n go an' use all that money from my crop, do you, when Herbie needs it so bad? I'm a-goin' to get that brace for Herbie, an' mebbe we c'n send him down to the city to a hospital too, if it turns out a big crop like it seems." His voice was studiedly casual. Not the least difficult feature of making this decision was the fear of being praised for his self-denial.

Pa Schoonmaker seized his son's arm in a grip that said more than his words. Neither would he express himself with utter truth.

"Course I knowed you'd feel thataway about it, Petey, all along. You're a good boy"—Petey squirmed—"an' mebbe things'll get better bime-by an' you c'n go to the college after all."

Petey knew how hopeless this optimism was, but the realization could not dim the strangely contented glow that stole through him now that the hard-fought battle was won. "You tell Ma; I got to go out to the stable an' bed the horses," he said hurriedly as they neared the house, and he darted away toward the barn lot.

Petey's care of the rapidly maturing corn on the seven-acre lot abated in no degree because of the new-planned disposition of the profits. With undiminished ardor he cultivated the stands of ripening maize, and gave, if possible, even closer attention to the welfare of the "contest acre" than before. His enthusiasm was now centered on producing a yield from this piece that would dwarf that of the winning acre in the adjoining county, though no reward could accrue to him save a personal sense of triumph.

The consciousness of thwarted ambition under which he chafed at times was stifled manfully by the thought of Herbie's well-being—which he had made possible. Poor little Herbie, he deserved all that could be given him. Perhaps he could get well now, what with all the benefits the corn-crop money would bring him. That would be worth all Petey's disappointed hopes.

The harvest days were near and Petey would soon garner his crop.

"It's goin' to be a smashin' big one, too, Pa," he remarked to his father as they viewed the expanse of yellowing leaves and fat ears on the side hill. Pa Schoonmaker, returning from the board meeting at the village, had come by the short cut over the ridge and happened upon Petey at the cornfield as he had planned to do.

"It measures up nigh to ninety bushels to the acre, I'd say, near as I c'n reckon," Petey continued, "an' that 'contest acre' ought to do a little better. That'll beat anything they got to show up over the line. Gee, I wish we lived over there, Pa!" he added, and then, in quick contrition: "Anyway, Herbie'll have a good chance to get well now, an'—an' I'm mighty glad it's a big crop—for the little feller. Mebbe next year the corn growers' association of this here county'll wake up an' give me a chance to win a scholarship prize." He smiled reassuringly at his father.

"Son, I got something to tell you." Pa Schoonmaker's manner seemed different. Petey thought, rather more care-free than usual. Perhaps he had come off best in a tilt with the stick-in-the-mud selectmen, he reflected sagely in the pause before his father continued.

"I hain't wanted to tell you anything until I was certain of it, but I heered to-day at the meetin' that the old lawsuit over the boundary line has been settled up to the capitol—an' you don't no longer live in Catskill County."

Petey, into whose mind the significance of this statement seemed slow in penetrating, could only look in wonderment at his father, doubt struggling with belief in his eyes. Sam continued:

"Know what it means, Son? You're in on the contest—I made sure of that afore I left—an' I been lookin' over nearly the hull of our county, an' there ain't a boy's patch o' corn anywheres that'll hold a candle to yours!"

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FARM and FIRESIDE

The National Farm Paper - Every Other Week

ESTABLISHED 1877

Saturday, September 11, 1915 5 cents a copy

PHOTO BY JOHN KABEL

A Profitable Lawn Party

"I have come to arrest the man you love"

Suppose W. J. BURNS, the great detective, were to appear unexpectedly at your door and say, "I have come to arrest the man you love."

What would you do?

Would you yield to the instinct that moves all of us to shield the men we love? Would you play for time in which to let your man escape?

Or would you say, "If he has done wrong I want to help him to right the wrong. I will go and tell him you have come."

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He speaks of them as "my six most interesting detective stories about women." They begin in October, an exclusive feature of the 1916

WOMAN'S HOME COMPANION

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Stories the Authors would not sign.

Perhaps forty of them—human experiences so personal, so intimate in their revelations, that their authors wrote only on condition their names should be withheld. Some of the titles are: "Some Couples I wish I had not Married," by a minister; "How I Made a Good Husband of my Son," by his Mother; "Learning to Fox-Trot at Sixty;" "What I did with my Husband's Insurance;" "My College Course at Fifty;" "How I Live Comfortably on $400 a Year;" "Confessions of a Tenor's Wife;" "Taking Mother into Partnership;" "The Girl Who 'Disappears'."

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E-W

FARM and FIRESIDE

—PUBLISHED BY—

THE CROWELL PUBLISHING COMPANY, SPRINGFIELD, OHIO

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Vol. XXXVIII. No. 25 SATURDAY, SEPTEMBER 11, 1915 *Published Bi-Weekly*

The Editor's Letter

At Coolfont Farm, September 1, 1915

WE HAVE heard a good deal of landlordism and other forms of tyranny, but it has remained among our readers for Mr. A. J. Bendle of Lake County, Indiana, to point out the danger we common people are in from "brain lords." Here is his letter:

"I have not seen any reply to our Southern brother's complaint of being held up by the doctors. I wish someone would voice his sentiments in regard to these 'poor' doctors.

"I think things are pretty much the same everywhere, and I think it should convince us that education as well as our plutocratic system is an utter failure. There seems to be coupled with education the desire for mastery; and those who seek the advanced education often desire it in order that they may live lazy lives, that they may reap without sowing, gather where they have not scattered, get a living without work, get rich by making others earn for them. Christianity is left out of the question. There isn't even dog justice about it.

"Why should a doctor receive two dollars for two drops of peppermint that is not worth a penny? I know of doctors being called across the street only, where nothing serious was the matter, but the people wanted to be on the safe side, and either no medicine was administered, or some simple thing like aconite or belladonna, and in each case it meant a day's wages.

"These men would shout to the working man, 'Be honest! Be honest!' But how can a man keep honest when surrounded by such parasites? Such is the result of our educational system.

"I think a great deal could be done to escape from the claws of the medical impostors if farmers would purchase a good medical adviser and a medicine case containing a score of known drugs—not patent medicines—which would always be ready and thus save money and time. I believe these 'brain lords' must be finally controlled in the same manner as are railway rates. I think it will finally come to this."

Receive Replies to Protest

WE HAVE received many letters in answer to the protest of our Florida friend against the physician's charges. As we have space we expect to print some of them. In the meantime it may be well for all of us to consider the charges against them made by Mr. Bendle.

In a general way the charge amounts to this: That the doctors are overpaid for their work, and that they misuse, to serve selfish ends, the power their superior education gives them.

I do not think, as to the medical profession as a whole, that either charge is true. Doctors as a rule do not get very rich. A young man studies medicine and begins the practice of his profession; but before he can begin the dreary waiting which most of them must endure he must have passed through high school, through college, and through a medical school. It has taken him in most cases ten years of his life to prepare. During those ten years he might have been earning a living at farming, or any other of hundreds of occupations.

Someone (perhaps himself) paid his tuition, bought his books, paid his board, clothed him, and took care of his miscellaneous bills during all that time. This means thousands of dollars.

When he has his license to practice, he takes chances. First, he must wait for patients. He cannot go out and hustle practice as an insurance or real-estate man can hustle business, but must wait. He may never obtain a practice from which he can realize a good living even. This is the first chance.

The second chance is that his patients will not be of the well-to-do class. The deadbeats wait for the young doctor, and much of his time for years is spent in working for the poor and the dishonest for nothing. If he is as good a man as most doctors are, he tries just as hard to give good service to those poor or dishonest people as if they were the wealthiest people, or the most reliable, in the community. Medical principles call upon him to do his best, and it is to the credit of the profession that he almost invariably does.

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When he gets a practice he must make up for all these losses. It isn't a question of wanting to do it—he must. This is perfectly plain: that if doctors as a class were not able to make up for their earlier losses by their later successes men would stop studying medicine, and we should not have any physicians at all. People who think doctors are not needed jump on the horse and ride with exceptional speed when a snake bites Johnny, or Susie falls out of a tree and tangles up her interior equipment, or some member of the family develops symptoms of appendicitis.

A Doctor is a Necessity

EVEN in the case of the doctor who was called in, as Mr. Bendle says, when very little was the matter, and no medicine was needed, the doctor was a necessity. Someone had to be called in who could say with authority that nothing much was the matter and that no medicine was needed. If the man called in had not been an honest doctor he would have pretended that something serious was the matter and would have kept coming even if he had had to produce his own symptoms. He should have been thanked for his honesty and fairness, not blamed for making a charge.

Fifty thousand pounds of cream a year are shipped from a Bohemian settlement near Dardanelle, Arkansas. An article telling about this settlement appears on page 5

The medical profession is composed of men who are working year by year to get rid of the thing out of which they make their living—disease. No other profession has the proud record of working to get themselves out of their jobs.

This is very pretty talk, the critics may say, but it doesn't remove the grievance of the farmers that their doctors' bills are excessive. That is true. The farmer is in the most unfavorable position of any man in the world in this matter. The doctors live in the towns, and the farmer not only has to pay for the call the same as the city man, but has to pay an additional charge of so much a mile for the distance the doctor traveled in making the call.

To call on a farmer is an expensive matter for a doctor who has a good city practice. While he makes one country call, he could make many in the city. And if he refuses to lose money on such calls, who can blame him?

The fact is, as a physician friend of mine has often told me,—a great man in his profession, and a member of the faculty of one of our greatest medical colleges,—the whole matter of taking care of the public health is on a wrong basis.

The doctor is in a questionable position when he must take money from a person who is ill for treating him. He is mistrusted by the stranger and the ignorant. His financial interest lies in sickness rather than in health. Even though his patient may be a personal friend, there will be those who will say when the patient passes away that the doctor has lost his meal ticket. The whole relation is shot through with inconsistency, conflict of interest, and often with suspicion. It ought to be placed on some higher plane.

It is not so with the physician employed by the public to look after health conditions. The freer the community is from sickness the better for him. He finds his reputation growing because he has headed off an epidemic or cleaned up a source of disease.

Mr. Bendle's plan of putting in a stock of drugs is not altogether a good one, for it takes a physician to make a diagnosis before it is proper to give drugs. Often the worst thing in the world is to give any drug at all.

Isn't this one way out for the farmers? Find out what doctor in the city is devoting himself to country practice, and patronize him. His charges will be lower because he is not leaving a city practice to attend you. The chances are he has a regular route to cover every day in the country to visit patients, the same as the city doctor has in the city. And it is possible he has either to pass your farm or drive through the country near your farm when attending to other country patients.

But I feel sure that we shall finally come to see that it is to the interest of the Government—state, county, or local—to look after everyone's health, and that doctors will become public officers who will win their spurs by keeping people well. When that time comes we shall all pay our doctors' bills when we pay our taxes, and every case of sickness may be treated free by the doctors of the board of health—not just the infectious ones.

My friend, the medical professor, says it has got to come to this, and that we shall not get rid of extortionate charges until it does.

Herbert Quick

Ninety cars of apples and peaches were shipped from the Dardanelle Bohemian settlement last year. Strawberries and cherries were shipped out in carlots too

Helps 2,100 Farmers

By W. T. SMILEY

HE WAS a young man. He listened much, said little, and did a great deal. No one would have suspected he was a farmer, and when he said he was he had to prove it. He furnished the proof.

Three years ago W. E. Watkins came to Allen County, Kansas, as county agent. This county, with 2,100 farmers, was the first to adopt the county-agent plan in Kansas.

The Crop Improvement Association, a group of progressive farmers of the county, paid half of the salary of the county agent; the business men of Iola, the county seat, paid the other half.

After much study and investigation of the soils of the county, County Agent Watkins decided dairying, alfalfa, and grain crops could take the place on the farms of the county, where oil and gas had made the farm revenues for several years.

The Allen County exhibit of grains, including corn, wheat, and oats, took first prize at the International Dry Farming Congress held in Wichita. The same thing happened in the fruit show of the congress.

The Eastern loan companies, learning of the improvement in agricultural lines in the county, announced recently their rate of interest in Allen County would be 6½ per cent, while in the other counties in the State it would remain 7 per cent.

The farm mortgages recorded from March 11, 1914, to March 11, 1915, amounted to $618,000. The reduction in interest on this amount, due to the work of County Agent Watkins, would have been $2,590. This amount will be saved this year.

Due to neglect and lack of interest in the industry, the hen did not produce a profit. Now the annual return from poultry and eggs is more than $120,000.

District No. 1 Changes

How Rural Schools Give Real Service to Patrons

By FOREST ALLEN

"I SAW a tin washboard-like arrangement in one of the pens on a hog farm I visited recently," a young orator from the state university told the patrons, teachers, and friends of School District No. 1 in Fayette County, Ohio, at the picnic held at the close of the school year, Friday, April 23d, "and on inquiry I learned it was for the hogs to scratch their backs on.

"That very school district in which this hog farm is located hasn't a sign of a library or other necessary equipment," continued the young man. "The school isn't in Fayette County, I am glad to say.

"The teachers in the rural school should get larger salaries," the speaker said. "The teachers are required to spend much more time in the preparation of their education before they can teach than they were required to spend in former years, and the law enforces no raise in salary to keep pace with the extra education asked.

"A friend of mine who is a cashier in a bank told me this incident which happened recently: 'A pretty little rural school teacher came into the bank with an order for a month's wages. I handed her the amount in paper money. Noticing her hesitancy in picking the money up, I apologized for giving her torn and soiled bills, and remarked I had forgotten that teachers were afraid of germs. She replied that such was not her thought at all, as she was certain no germ could live on her salary.'"

It has come down to us through the ages that Easter, that glad time of Resurrection and awakening life, shall come on the first Sunday after a certain full moon. There is no law, written or unwritten, that prevents other Easter days, even on Friday, and so Friday, April 23d, will be long remembered as a Resurrection Day for the school patrons of District No. 1, Fayette County, Ohio, for on that day they arose from a lethargy, mental, moral, and physical, so far as concerned the social and school life of the community, and put on new robes of fellowship, and bonnets trimmed with the fruits of awakened interest which had been propagated and nurtured all year by a zealous trinity—the county and district superintendents, and a wide-awake teacher. Then they rolled away the barriers of selfishness, politics, and jealousy and went, many with more curiosity than enthusiasm, yet they went, to the District School Picnic.

This does not deal with the children from this district of thirty-six schools, for they went "total enrollment strong" in most cases, the magic word picnic drawing them like the Pied Piper of Hamelin Town: this has to do with the parents and elders of the neighborhood who had for years been in the habit of postponing all neighborhood affairs until wintertime, when work should be slack, and then dropping them on account of bad weather. There is no postponing the "last day of school," and even Mother Nature pushed this affair by sending such a downpour the day before that there could be no excuse to stay at home, for it was much too wet to work.

Hold Ball Game in a Meadow

THE grounds secured for this festivity were those of the Spring Grove Methodist Church, a large wooded lot of several acres, almost in the center of the district. A great blue-grass meadow just back of it for the ball game, excellent drinking water, and the use of the church piano were especially convenient features of the location.

A local band was present to enliven the occasion; and after several selections, choruses, motion songs, and folk dances furnished entertainment until the beginning of the track events. The prizes were well distributed among the various schools, and then came dinner. It would be difficult to describe a picnic dinner served by farmer folk, but every school with parents and friends were seated together, and twenty-five or more such groups gathered around the proverbial "groaning board" were a goodly manifestation of the prosperity and democracy of this section of the State.

After the spread and an hour's visiting, the band led the way to a gaily decorated hay wagon, where the speech was given by the young orator.

After the speech some visited, and many went to the exciting ball game between the high schools of District No. 1 and District No. 2, but on all sides one heard the question, "Why in this banner corn county, this county that boasts the finest horses in the State, that ships the most export cattle, that secured the first free village mail delivery and the first county normal under the new school law—why had this never happened before? What suddenly roused these people from their social torpor?"

The answer is evident to all who have been following Ohio school affairs since the autumn of 1913, for the investigations of that period led to the sweeping rural-school reform laws enacted by the 1914 Ohio Assembly early in its session. These amended, cut out, and added to the old laws until they are now like the famed barrel that came over in the Mayflower—a new set of staves and the second set of hoops, but the bunghole is still the same.

And how the rural taxpayers buzzed around from the time the investigation began until the governor's signature was affixed to the finished law. Then they swarmed, literally and figuratively, to see what could be done to prohibit this unnecessary and enforced expenditure of good hog and corn money for county superintendents, not fewer than four district superintendents in every county, libraries of not less than fifty volumes selected from prescribed lists, agricultural apparatus with a minimum value of fifteen dollars, truant officers, keep grounds and outbuildings clean, and eliminate all schools not having an attendance of twelve pupils, and transport the pupils to other schools. The laws required the boards to furnish maps of Ohio and the United States, at least one hundred square feet of blackboard, supplementary readers, and many other essentials.

All the Schools are Graded

THEN every school, however remote, must be graded and follow the prescribed course of study agreed on by the superintendents and a county board of education; this last elected by the presidents of the various village and rural boards of education in every county school district. This system of grading shows Johnny Jones, the only fifth-grade pupil in subdistrict No. 20, that there are thirty or more other fifth-grade classes; he scents competition and gets down to business.

Now this Ohio school law was not reformed without thorough study, but was preceded by a personal visit or inquiry to every rural school in Ohio. This was accomplished by the Rural Schools Survey Commission created in the autumn of 1913, who prefaced their report with a clause that "In order to raise the rural schools of Ohio to a first-class standard, these things before mentioned must be done, besides countless other essentials." And the lawmakers listened because these men were school men, and for the most part had received their elementary education in the little red schoolhouses of Ohio.

A wooded lot of several acres, nearly in the center of the district, was used for the picnic grounds

But the rural taxpayers bitterly denounced the new rules and regulations. Then Johnny brought home the school milk tester and showed his father the star boarders in the dairy herd; Susie read one of the new library books to the family, and little Mary learned to crochet and did several things in plain sewing for busy work at school. Their corn, too, made such an excellent showing at the school exhibit of local products that they began to be conscious of a stimulus that finally lifted them, at the close of the year, to this united effort in behalf of a better rural educational and social center for their children.

All supervision requires uniformity; all uniformity sets a standard, and to raise an institution to that standard causes a certain upheaval and remodeling of public opinion, which in turn engenders a true community spirit, a duty and desire on the part of residents to get together and talk things over.

Now some may ask if this was a complete resurrection of the whole district. Certainly not, for in every locality there are people so deeply buried in a sepulcher of selfishness and mental stagnation that no call of community betterment, however loud, would awaken them.

"The poet lives in verse; the artist's canvas is for all to see;
The deeds of martyrs, statesmen, kings, endure in song and history;
But what have we, the multitude, who felt no touch of Genius' wand?—
Some being to proclaim, 'He helped me rise by reaching out his hand.'"

A group of the teachers that helped to make the picnic a grand success

Increasing the Profits

By P. C. HENRY

WHAT neighborhood could be built up around a name like "Hickory" without sooner or later developing a substantial and enduring community backbone?

Hickory, Catawba County, North Carolina, now has in lively, successful working order a co-operative creamery, a rural-credit association, an agricultural high school, and a network of improved sand-clay roads radiating from Hickory as their community center.

Mr. R. L. Shuford, a thrifty farmer, was responsible for the co-operative creamery. Instead of the cotton cropping system of farming, Mr. Shuford branched out into dairying to increase the productiveness of his fields. His idea worked and his herd grew. He soon had contracts for all the butter he could supply.

At this time a young man, Mr. J. W. Robinson, was clerking in the town of Hickory. The land his father owned had been run down and, like many others, young Robinson had deserted the farm for the town. He began to watch what Mr. Shuford was accomplishing with dairy cows. The new system of farming so appealed to the young clerk that he gave up his low-salaried position to go back to his father's farm. There he repeated Mr. Shuford's new system of farming, using a herd of Jerseys to start the new plan of "making over" the farm. These men, together with others, established a co-operative creamery as soon as there were 300 dairy cows to contribute butterfat.

The creamery was a success from the beginning. Every pound of butter was guaranteed to come from cows that had been tuberculin-tested. The attractive monthly checks caused the neighbors of Mr. Shuford and Mr. Robinson to become interested, and the number of patrons steadily increased.

Wagon Collects Cream and Eggs

THE creamery wagon also collected fresh eggs. The eggs were put up in neat cartons holding a dozen apiece. The eggs were guaranteed to be strictly fresh. Every patron stamps all the eggs he furnishes with a rubber stamp. Every farmer uses a different number. A person charged with selling bad eggs three times is no longer permitted to sell eggs to the association. This rule makes every patron careful.

The creamery has outgrown its buildings. An additional wing has been completed. The new quarters are occupied. A cold-storage department has been added which enables the creamery to store butter or any perishable product until sold.

The success of this first creamery in Catawba County was the direct cause of a similar creamery being established in Iredell County on the east, one in Lincoln County on the south. Caldwell County, on the west, will soon be ready to launch a similar creamery enterprise.

In order to change from the one-crop system of farming, funds were needed to purchase dairy stock, good males to head the herds, and to build silos and make other necessary improvements. Where would the money come from? It was then that the secretary of the co-operative creamery, Mr. W. J. Shuford, suggested that a rural-credit association be formed, modeled on the building and loan idea of the cities. He called a meeting at which various plans were discussed to help the farmers get money at a low rate of interest and for long-time periods.

The Catawba Rural Credit Association began business with 38 shareholders subscribing for 200 shares. Every member pays an initiation fee of 50 cents a share to join, and $1 a month for every share carried. The par value of a share is $100. A payment of $1 for every share will mature $100 in about 82 months.

The money is lent to shareholders at 6 per cent. It is secured by first mortgages on farm lands at not to exceed two thirds of their cash value. Loans are made to shareholders only. Every shareholder must carry one share of stock for every hundred dollars borrowed.

Three shareholders from every township constitute a loan committee. They examine all property offered to the association as security for a loan, and then make a written report to the directors.

Many farmers have joined the association for mutual help. The question has been asked, "Will we get funds enough to meet the demands that will be made upon us?" We believe that we shall as soon as all our farmers realize that they can individually help one another.

EW

Reclaiming a Wilderness

Well-Directed, Persistent Energy Brings Rewards

By VICTOR H. SCHOFFELMAYER

Log barn erected at expense of labor only, by Bohemian settler

TAGGED like pieces of baggage, to insure safe arrival at their destination, a dozen bewildered Bohemian immigrants, direct from Prague, thirty-nine years ago last June, alighted unceremoniously from a train on the "Oak Flats" of western Arkansas. Near the town of Dardanelle at the foot of Mount Nebo, where the Ozark Mountains come down to the Arkansas River, the brave colonists founded a settlement which in a generation has become one of the most important shipping stations in Arkansas. Although at the time of their arrival the total means of the settlers did not reach more than a few hundred dollars, so well have these men and women labored and saved that there are many in the colony to-day who are wealthy. There are 400 persons in the Mount Nebo colony at present, the humblest of whom owns a quarter section and the most prosperous several sections, worth $50 an acre. Almost every foot of farming land has been reclaimed from the oak and pine forests of the Ozark tableland. Trees were felled, stumps grubbed out and burned, and rocky ridges converted into fertile fields by a system of farming whose underlying principles are steadfast purpose and never-ending labor.

The farm of Josef Novi, one of the original settlers, lies on a gentle slope approaching the foothills. Glistening in the bright sunshine his neatly painted white farmhouse flashes through the trees. A long lane leads to the home. Last June a well-kept garden full of old-fashioned phlox, cornflowers, and yellow and red roses bore testimony to the simple art which characterizes these people.

Behind the house roomy barns and granaries and fat haystacks told their tale of prosperity. Gentle, sleek milch cows with bulging sides grazed on meadows covered with grass knee-high. In a near-by alfalfa field brood sows were teaching their numerous offspring the delights of the succulent green. Corn stood waist-high, oats was ready for the harvest, and wheat was in the dough. It was a scene of tranquility.

From the house to greet the visitor, Josef Novi came, eager to be of service. A friendly chat brought out the history of those many long years dragged out wearily in Austrian coal mines. The pinching poverty, the unceasing heavy toil, the growing family and the first signs of failing health—all these again flashed through the mind of the settler to whom America proved to be the best of mothers.

Being liberally read and also interested in world affairs, the aged Bohemian speaks of the war, the catastrophe which has brought ruin to the land of his birth. It is here that the true measure of the settler who braved the terrors of the western wild reveals itself. Peace and harmony and their sacred arts, the sanctity of labor and the glorious equality and opportunity of the freeborn, excite the admiration of these Bohemian settlers. Josef Novi's eyes flashed as he spoke of the desolation wrought in far-away Austria by the ruthless invader, but his almost forty years of American influence had broadened his sympathies to include all alike in a heartfelt welcome to the Land of Opportunity—the United States, where the soil calls the warrior and the downtrodden peasant.

Under the leadership of Josef Wesli the Bohemian colonists pooled their meager earnings, buying the generally considered poor Oak Flats land at the foot of Mount Nebo. Ignorant of American values the settlers fell into the hands of unscrupulous speculators who extracted unjust prices for land. Some in their eagerness to find work and pay for their little farms contracted to clear timberland and prepare it for farming for the pittance of 40 cents an acre.

Raise Early Garden Truck

THE farming methods of the Bohemians had the elements of success. The leaders of the community saw that Dardanelle, a town of 4,000 inhabitants, had an inadequate supply of garden truck, milk, butter, and eggs, due to the traditional sluggishness of the native Southern hill dweller. Here was an opportunity. Every colonist raised early spring vegetables, potatoes, green corn, cauliflower, and celery. The plants were nursed in hothouses and planted in the open when the weather was safe. A flourishing trade was the result.

Typical tableland cleared of timber by Bohemian settlers near Dardanelle, Arkansas

The Bohemians bought milch cows here and there, mostly of the notoriously poor Southern stock, but by systematic feeding and careful breeding the stock was improved. Thus the dairy business had its inception in western Arkansas. The Bohemians now ship an average of 50,000 pounds of cream a year to the creameries at Little Rock at an average price of 26 to 33 cents a pound. The energy and perseverance of the settlers has infected the entire community. Better farming methods in general have brought prosperity to the hill farmers.

No Bohemian ever drives an empty wagon homeward; it always is filled with manure which the enterprising settler himself collects from town stables. Whereas many native farmers let their lands grow poorer year after year from heavy leaching during winter rains, the Bohemians have built up every foot of soil by applying fertilizer.

Add Fertility to the Soil

IN THE case of the Novi family, typical colonists, while the men were grubbing out stumps on newly broken land or were planting crops, the women of the family and the children, when not in school, gathered leaves in the woods, filling large sacks and dumping the contents in the furrows. Thus laboriously and slowly they added fertility to the soil instead of taking it away. Soil which twenty years ago would not raise 25 bushels of potatoes, now matures crops of 150 bushels an acre. Corn yields on mountain slopes and creek bottoms have jumped from 10 bushels to 40 bushels an acre. It is the same with every crop grown.

This pasture on the farm of Josef Novi was virgin timber twenty years ago

Waste land on rough ground has been planted to apple and peach orchards. Last year Dardanelle shipped 90 cars of apples and peaches. The trees are sprayed at least three times a year, and are carefully pruned and headed. Cherry orchards have proved profitable. Strawberries, netting $1 to $1.50 a crate and yielding 250 to 300 crates an acre, constitute one of the most important products shipped from Dardanelle. There are several strawberry fields of 20 to 35 acres. The berries are shipped in carlots to Northern and Eastern points.

A typical success among Bohemian colonists at Dardanelle is that of Mac Pfeiffer, who accompanied his parents to America at the age of one year. His folks had practically no funds on arrival. As soon as the son was old enough to work he was given several acres to till. He succeeded so well that at the age of sixteen he was in charge of a farm of 119 acres. This property has been developed into one of the most noteworthy in that part of Arkansas. Mr. Pfeiffer raises cattle, hogs, and poultry. All corn and oats used for feed is grown on the place. Hogs are placed on the market weighing 250 pounds at eight months. They are not expected to make their living roaming the woods. Instead they are fed regularly. From the cotton crop of about five acres the cottonseed is saved and fed to the hogs and cattle. Cottonseed meal is the most economical feed known to the Southern farmer. Cottonseed meal fed to milch cows increases their milk flow a third to one half in the midst of winter. Nine cows on the Pfeiffer farm earn $60 a month in cream, besides supplying skim milk for the hogs and other young stock.

A flock of 50 chickens made a profit of $3.50 a week during last winter, being fed largely sprouted oats and root crops. Another source of income is a three-acre vineyard. Concords and Moore's Early command 12 to 15 cents a pound for table use, and are shipped to near-by cities. A good vineyard yields from 5,000 to 8,000 pounds an acre.

Sixty acres under cultivation have brought independence to John Kubat, a Bohemian who settled near Mount Nebo. On cut-over land which long had been overlooked by others he annually fattens a dozen calves and steers, 20 to 30 hogs, and a small herd of sheep and goats. Four milch cows produce 25 pounds of cream a week. The cream brings 26 to 33 cents a pound. The cows are kept in good condition on cowpeas which are sown broadcast on a field from which winter oats have been harvested. Cowpeas yield nearly three tons of nutritious fodder an acre. Ten dozens of eggs are sold during the winter from a flock of 50 hens. The home occupied by the Kubat family did not cost to exceed $800. A rose garden, tulip beds, and climbing vines adorn the yard which is approached through a pine forest. Cattle graze on the pastures from eight to nine months a year.

Martin Balloon, formerly a cobbler in Prague, has succeeded in paying for 640 acres of land, largely out of the profits of the original 20 acres he purchased with his savings. His motto was to buy only mares for working stock, on the theory that every mare would foal a mule colt a year. The colts usually sell for $75 to $100 at the age of six months. Later a dairy herd was started. The surplus skim milk was fed to growing pigs, making pork at about three cents a pound.

Fifty bushels of corn an acre are raised on the farm of Vam Mashek on rough mountain land which twenty years ago was primeval oak and pine forest. Only Mr. Mashek alone knows how many hundreds of wagonloads of manure and leaves from the woods have been plowed under to make soil. He has never known a crop failure in his thirty-six years of farming at Dardanelle. His herd of eight Holstein milch cows earn $20 a week throughout the year. Apples, cherries, and berries last year made a profit of $500. A colony of bees last year brought a profit of $160, the bees being absolutely no expense.

The success of the Bohemians at Dardanelle, Arkansas, is an illustration of the truth that persistence and energy, provided they are wisely directed, will be rewarded. Had the settlers from Prague not sought a home on the slopes of Mount Nebo and surrounding tableland it is doubtful if the immense expanse of hill land now under cultivation would be anything but a wilderness as it was forty years ago. The Bohemians have proved themselves able to cope with the peculiar conditions confronting aliens who settle in the West among a strange people and without adequate preparation. They have become wealthy and influential. They have won the respect of the community in which they live.

The Water We Drink

By AMOS L. GRIDLEY

UNLESS the drinking water is known to be pure, it should be purified. Water from wells and streams should be suspected, and spring water if the springs do not come from deep and uncontaminated fountains. When a family has used a water supply for a long time with no ill effects, it may be accepted as safe, unless disease has broken out or new conditions have arisen; but whenever recourse is had to a new supply or an old one which has not been used for a time, the water should be tested; and if not tested, it should be purified.

Boiling it will make it safe; but, as is suggested by Doctor Magoon of Washington, there are other methods besides.

Chloride of lime can be bought at any grocery store or drug store in ten-cent cans for so small a sum that its use involves practically no expense which anyone will feel.

The only objection to it is that if used in too great quantities it gives the water a disagreeable taste and smell. It can be used without this, however, in quantities which will kill the disease germs if any are present in the water.

Dissolve a teaspoonful of the chloride of lime in ten quarts of water, and use the solution in purifying the drinking water for the family or the stock. This teaspoonful will treat successfully a thousand gallons of water. Close the chloride can and keep it closed until it is necessary to take out another teaspoonful. Prepare a fresh quart of the solution each time, as it loses its strength by standing.

It will pay to use this wonderful water purifier for the drinking water for the live stock if there is any reason to suspect it of carrying disease germs. It may save an outbreak of disease.

As for the family drinking water, no chances should be taken when it can be cleansed of suspicion by this safe, clean, and tested method.

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Training Horses

Colts Become Fearless if Taught to Obey

By DAVID BUFFUM

A FEW days ago, driving a filly that I was breaking to harness I turned into an unaccustomed road and presently came to a place where recent rains had made a broad, shallow pool of water, extending the full width of the road and some fifteen or twenty feet in length.

Miss Filly stopped suddenly; she had no notion of trusting herself to the "dangers of the deep." To be sure, it was only five or six inches deep in the deepest part, but how was she to know that? She had already been taught that ordinary puddles in the road were not bottomless, but this great inland sea was different. To her excited mind it might be a thousand feet deep, with perhaps greater terrors lurking beneath its muddy surface. The demand of her driver that she attempt to cross it was quite too unreasonable to be even considered.

I let her stand a few moments till her first terror had somewhat abated; then I quietly urged her forward. It was at least a couple of minutes before she finally approached the edge of the pool and very gingerly put one forefoot into it. Then, finding that the water was wet, she jerked her foot back and, with a sudden jump, turned nearly tail about and placed a more satisfactory distance between her position and the bottomless pit.

Again I coaxed her till she again approached the water. This time she put both forefeet into it. Then, just as I noted signs that she was about to repeat her jumping-back performance, I struck her sharply with the whip. She sprang wildly into the air,—but forward, as I wished, not backward,—landed squarely in the middle of the pool and rushed across it.

After driving a little distance I turned about, drove back to the pool, and crossed and recrossed it till she had not the slightest nervousness about it. Later, during the same drive, she crossed, without any hesitation, a considerable stream whose steep banks and generally forbidding appearance might have alarmed many an older and so-called well-broken horse.

How Bad Habits Start

I HAVE given this detailed description of a very simple occurrence—but which, simple as it was, might have laid the foundation of a bad habit—because I wish you to note carefully what I did and the order of its doing.

First I showed my filly, with all the gentleness and patience that I could, that there was nothing to fear in what seemed to her so terrifying. Then, when she had had full opportunity to understand me, I made it clear to her that in any event she must cross it, whether she wished to or not. In other words, that while I sympathized with her fear, and was willing to explain it away, she must nevertheless realize that I was her master and that she must always do my bidding.

Now the way that I managed my filly is the way in which all horses should be accustomed to objects they fear, and constitutes the first and all-important step in making a fearless horse out of a timid one. For, as the horse reasons far more from experience and far less from observation than man, the impression of such a lesson on his mind is not only strong but twofold. It has taught him that that particular object of his fear is harmless; it has also begun the impression—which, as it is not so clearly evident, must be strengthened by repeated similar experiences before it gains much foothold—that the things his master requires of him are all right and will not hurt him.

Accustom Horses to Objects

IS IT necessary then to accustom the horse with equal care and pains to every new object that he fears? Assuredly. And if, for instance, the next thing that frightens him is a log in the grass by the roadside—which, you may be sure, his excited imagination transforms into some great beast, ready to spring upon him—he must, in exactly the same way, be first shown that it is harmless, and then be made to pass it quietly. It may take quite as long as it did to make him indifferent to the pool of water which at first so terrified him. But do not be discouraged. For after repeated experiences of this kind he will, if handled rightly on every occasion, gradually come to have less fear of a new object of terror and his fear will be correspondingly easier to overcome. And thus you finally have a fearless and sensible horse where at first you had a timid and foolish one.

"Takes patience," do I hear you say? Yes, lots of it, and some other qualities too. But no man of ordinary intelligence, if he believes that good horsemanship is worth while and realizes that self-control is necessary before he essays the control of animals, need fear that he has not the needful qualifications.

The well-bred draft horse is one of the most level-headed of horses, and is less subject to unreasoning fear than those of the more nervous and excitable kind. This is because he is a greater departure from the wild horse type

Of no less importance than the horse's conduct when confronted by a terrifying object is his behavior in case of a breakdown or other accident. It is not a very desirable animal who kicks or runs away if the harness breaks or the vehicle behind him makes strange noises.

In this respect I have found nothing of such good discipline for the colt as light farm work, such as plowing old ground, harrowing, cultivating, and the like. This accustoms him to the rattling of implements and chains and the dangling of traces and whiffletrees as nothing else can. It also has a wonderful steadying and civilizing effect. I have frequently heard it said that highly bred colts, of carriage stock, ought not to be put to such work; but this, assuming always that the colt is large enough and strong enough for the task, is sheer nonsense. Of course, care and judgment are always necessary; the work should not be too heavy nor too long continued. An hour a day or, if strong enough, two hours, one in the forenoon and one in the afternoon, is enough. Remember, we are doing it for the good of the colt and not for the work we get out of him.

One of the best illustrations of the value of this kind of training was furnished by a pair of chestnut colts that I raised many years ago. Both were from thoroughbred dams, by a standard-bred horse. They were naturally rather nervous and high-strung, and at the time of which I speak were four and five years old respectively.

One day we were out driving with these colts, our party consisting of my wife and a girl friend, our four little children and myself. I live in New England, and you know how New England roads run—how they never avoid a steep hill by going round it, but go right across country, "up-hill and down-dale." Well, our road that day took us down one of the steepest of those steep hills.

It happened that my neck yoke was a new one, and it had a flaw in it that I did not suspect, as it was concealed by the paint and varnish. Right in the steepest part of the hill it snapped in two in the middle; the pole dropped to the ground, and the carriage, which had no brakes, ran onto the colts.

The colts were startled, of course; but I had no difficulty in soothing them and making them stand quietly, holding back the carriage with their haunches until everyone got out. Had the colts not been accustomed to farm work and dangling whiffletrees around their heels, the case might have been far otherwise. They proved the value of their training. But you'd better believe, with those two women and those four little kiddies in the carriage, I was a mighty anxious and unhappy man till I got them out!

I recently had a letter of inquiry from a young woman who stated that she lived on a farm where several colts were raised every year, and that nearly all of them were "unreasonably timid" when first used on the road. And she asked me two questions which fortunately were easy to answer, for I have sometimes thought that young women have a special gift for asking difficult questions.

Why are Animals Timid?

HER questions were, first, "Are horses naturally timid animals?" In this connection she cited the common use of the horse in war. Second, "Are there breeds or kinds of horses that are more fearless than others; and, if so, what are they?"

To the first: Yes, the horse is by nature a timid animal, as, generally speaking, all animals are to whom Nature has given powers of swift flight as their chief means of self-preservation. Of course individuals differ in this respect, but the rule is so general that it should never be lost sight of in training. That the horse can be trained to war, simply shows the extent to which his natural impulses can be modified and subdued by the art of man.

Second: Breeds of horses do differ in regard to natural timidity. The pure-bred Arab is beyond all comparison the most fearless horse in the world. It is possible that this may be owing in part to the fact that his natural development was for long ages in an open country, where he was not in constant danger from unseen foes, but chiefly, I think, because he is a higher evolutionary type than any other horse.

The small ponies of the far north probably rank next to the Arab in fearlessness. I once bought an Iceland stallion and three mares and bred them for many years. I do not recall that any of them ever showed fear of anything—at least, to any extent worth mentioning. Breaking them to harness and accustoming them to the road was a pastime rather than a task.

The well-bred draft horse is one of our most sensible and level-headed horses and, as would naturally be expected, less [CONTINUED ON PAGE 8]

Light farm work, such as plowing, harrowing, or cultivating, is good discipline for young horses. An hour or two a day is enough. The work is for the good of the colts and not the amount done

E

Dynamite in the Field

By Ruth C. Gifford

DYNAMITE set off by electricity certainly is successful in getting out stumps. The photograph shows an apple-tree stump coming out. It measured over sixteen inches across. One charge of four sticks of dynamite blew it completely out.

On the same day we blew out the stump of a mammoth old chestnut tree. One heavy charge brought it all out. Not a single root had to be cut with an ax.

As the dynamite had been placed three feet below the surface, all the roots which did not come out were broken off so far down in the earth that they could never possibly interfere with the cultivation of the field.

When electricity is used, even if the dynamite is in eight holes around the stump, it will all explode at the same time and simply "boost" the stump right out of the ground. If fuses are used, the dynamite in one or two holes will often

An apple-tree stump sixteen inches across was blown out with one charge of dynamite

go off before the others. This loosens the earth so the rest of the charge has practically no effect. The stump is usually loosened but the roots are not broken. This always means a lot of hard work with mattocks, crowbars, and axes.

In setting the dynamite charges, the men first go around with crowbars and drive them down in a slanting position under the stump. As many holes are made with the bar or auger as are thought necessary. Augers with long handles are made especially for the purpose. Then the dynamite is divided equally among the holes and gently slid in and pressed down. A dynamite cap goes in the last stick placed in each hole.

Two thin cheap wires about five feet long are fastened in the top of each cap. These wires extend a couple of feet out of the ground. Then a wire from the first and a wire from the second cap are connected, and so on around the stump. Two long wires of the same cheap construction are fastened to the two free wires. These in turn are fastened to the regular wrapped wires attached to the battery box. If the cheap wires get broken it isn't much loss. Six dry cells supply the electricity, which is controlled by a push button.

This is arranged on the same principle as the dry cells, push button, and horn on an automobile. However, if I were the person who connected the wires around the stump, I should want one of the long wires disconnected at the push button, so there would be absolutely no danger of a premature explosion.

Another thing, with this method there is no danger of walking back into an extra slow-burning fuse and a late explosion.

Dynamite is also fine for getting tough tree trunks split up into firewood. Here in Maryland we have several kinds of trees so tough that it is almost impossible to split them in the ordinary way.

Wheat in Spite of Fly

THE Hessian fly has been bad this year over most of the country, and many farmers feel like giving up the growing of wheat. There seems so little that anyone can do to fight the pest.

Yet wheat will continue to be grown, and there are certain things which will help in keeping Hessian fly damage down to the point where it will not wipe out all the profit.

Plant late in the fall. On one Ohio farm there was a fine crop, while just across the road a neighbor's wheat was practically ruined by Hessian flies. Late-sown fields are seldom badly injured.

Rotate your crops so that wheat will not be sown after wheat.

Keep next year's wheat field as far from last year's as possible. That is, do not let them overlap or come close together. The flies can travel, but they do most damage when they find the wheat ready for them on the ground where they are hatched.

Plow wheat stubble early if it is not in clover or grass. It pays in the killing of weeds and the liberation of plant food in the soil for next year's crop, and it kills off a lot of unhatched Hessian flies.

Destroy all volunteer wheat in the fall, not only on the wheat field, but elsewhere.

The greatest of these rules is that of late planting in the fall, because it calls for something over which we have control.

Organize Pest Districts

COLORADO has a new and seemingly good law under which pest districts may be organized for the extermination and control of prairie dogs, other rodent pests, grasshoppers, and other insects.

Harvesting in Wet Fields

A GREAT many fields of small grain were very wet this year, and some were lost because the ground was too soft for machinery. Did any of our readers try that device we published for using the running gears of a wagon to hold the binder up? If they did we should like to hear reports from them.

Hay Carriers That Work

By Carlton F. Fisher

THE combined use of slings and hay forks was recently mentioned in an article on haying. Hay carriers are made for use with forks or with slings, and are known as fork carriers or sling carriers.

To use a fork carrier with a sling, a self-locking sling pulley is needed. To use a sling carrier for handling a fork, a clevis must be used for fastening the two hooks of the sling carrier together. Sling pulleys cost about $2, and fork clevises about 35 cents.

The advantages of using either forks and slings or both are pretty well known. In hay that holds together well, like timothy, a harpoon fork is the common favorite. Harpoon forks, either double or single, are light to handle and take the hay up fairly clean, but a harpoon fork is a dangerous thing in the hands of a careless man.

The grapple hayforks are a little more cumbersome to handle, but are popular for handling slippery hay. While a harpoon fork will work well when considerable skill has been used in loading so as to make the load hang together, a grapple fork will take it up no matter how the hay was loaded. Also the grapple fork will take up hay, such as dry clover hay, in which a harpoon fork would pull through. Grapple forks will even handle threshed straw. Harpoon forks cost from $1 to $2.50, grapple forks from $4 to $8.

The use of slings for handling hay calls for judgment and generalship. You must consider the strength of the carrier and track, space above beams in barns, length of hayrack, and the amount of hay to put on the load. With a fork you can vary the amount of hay taken up each time, but when you use slings, that must be regulated in the field. A 16-foot hay rack is the limit in length when hay is hoisted with slings. Most users put on three slings to a wagon load. The first one is put directly on the rack, with the ends drawn well out where they can be reached after the load is on. When about one third of the load is in place, a second sling is put on. When the next third of the load has been added, the third sling is put on it, and when the load is all on you are ready to go to the barn.

To get the load off, first hook the sling pulleys on the two ends of the uppermost sling and take off the top third of the load. Repeat with the middle third, and finally with the bottom.

While slings are some trouble in the field, they save work at the barn because the hay is taken up so clean. Slings cost from $2 to $5 each, and will handle not only hay but grain, either bound or headed, or any loose material.

The arrangement of hay tracks and hoists is a matter of personal preference. End-hoist barns seem most popular, with center hoist second and double-end hoist third. By that I mean a barn arranged with hay doors in both ends.

Vertical Farming Proved

By Effects of Orchard Blasting With

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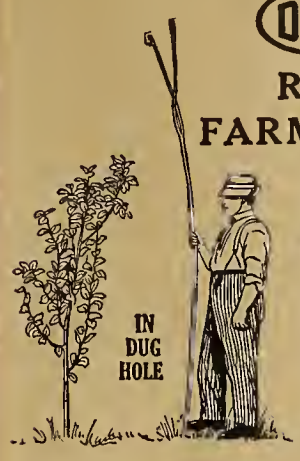

These cuts are made from photos showing comparative growth of pear trees from Spring of 1913 to August, 1914, Bellemont Orchards, Inc., Norfolk, Va.

ALL progressive farmers and orchardists know that trees planted in blasted ground grow much faster than those planted in the old way and bear fruit earlier. This proves the truth of the principles of Vertical Farming, which aims to cultivate *downward* as well as to till the top soil.

Three years ago tree planting in blasted holes was experimental—now millions of trees are set out by the Vertical Farming method every Spring and Fall.

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"Since using Grape-Nuts I have made a constant and rapid improvement in health, in spite of the fact that all this time I have been engaged in strenuous and exacting work.

"I have gained twelve pounds in weight and have a good appetite, my nerves are steady and I sleep sound. I have such strength and reserve force that I feel almost as strong and fresh at the close of a day's work as at the beginning.

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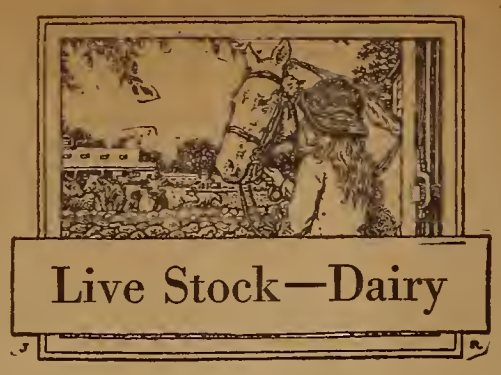


Live Stock—Dairy

Hereditary Horse Colors

THE color of a horse has a good deal to do with its market price. Except for funerals, circuses, and a few special purposes, white horses are not wanted. Light colors in general are not as popular as dark.

The British army wants neither white nor light gray horses because they are such good targets on the battlefield. Bay, black, brown, and chestnut are in greatest demand.

Gray colors are very hard to get rid of by breeding. A pure gray mated with bay, black, or chestnut always produces a gray foal. Black mated with black will theoretically give all black foals, but in actual count of all kinds of black or nearly black horses, 90 per cent of the colts were black. But for practical purposes black nearly always breeds true.

Chestnut crossed with bay frequently gives a blend, for example: 52 per cent of several hundred foals were bay; 41 per cent, chestnut; and the rest black or brown. Chestnut and brown also blend, giving about 50 per cent bay foals, 25 per cent chestnut, and the rest black and brown in about equal proportions.

The color is no indication of working ability, speed, or disposition.

To consider the question of color in live-stock breeding is certainly a wise thing to do. But it should be secondary to other more important qualities, such as vigor, size, and soundness. Sometimes a certain color has been so established—for instance, the white in the White Leghorn or the face of the Hereford—that it has ceased to be a drawback since it is no trouble to maintain it. But color style has worked to the great damage of some of the best breeds. Wherever the color scheme causes the rejection of good animals because of faulty color, it is a vicious sort of dual-purpose breeding.

SPRAYING cows with one part of kerosene to three parts of fish oil will keep flies off cattle. Apply the mixture with a spray pump.

Making Money on Lambs

W. C. COFFEY of Illinois finds that it is easy to spend too much money on ewes in early pregnancy. Cheap feed may be used then, like corn fodder, oat straw, and the like. Silage is cheaper at this time than clover or alfalfa. Good milk-making feed must be poured into the ewes after lambing if this cheap feeding has made them thin.

They must be fed liberally for four weeks after the lambs arrive. They will turn the feed into milk, and milk makes lamb for the market.

Lambs should come early in order that they may be big and strong, reach the market when lambs are not a drug on it, and escape the ravages of the stomach worm. For Illinois Mr. Coffey thinks the middle of March the right average date. They went on blue grass at five weeks old. If they come much earlier it means too long a feed on the dry lot on high-priced feed.

Sheepmen often make a mistake in failing to get lambs eating grain as soon as they should. They should be eating grain not later than at three weeks of age, and kept at it if they are to be heavy enough for the market by the first half of July.

Too many lambs are lost in lambing. Eternal watchfulness is the price of a good lamb crop.

The Moon and Silage

WELL, well! Here's a correspondent who thinks the moon influences the keeping of silage. And the silo has become popular only since we had a general system of public schools.

Drenching the Hog

OUR plan for drenching a hog has raised the question, "Why drench the hog?"

A Minnesota man furnishes one answer. He fed to his pigs a lot of brine mixed with milk and cream derived from the making of a gallon of ice cream. In a short time most of the pigs were dead.

It is rather hard to kill a hog with strychnine or arsenic—of course it can be done—and we have never known of the loss of a hog by snake-bite; but common salt is a deadly poison to hogs if taken in large quantities.

Swine will not eat much salt unless tempted in some way. In the Minnesota case the temptation was in the milk and cream in the brine.

According to Doctor McElroy of Minnesota the remedy for salt-poisoning in hogs is an emetic early in the trouble. He recommends for the emetic apo-morphine, a fourth of a grain to a grain, zinc sulphate, or ipecac. If the pain is very severe a teaspoonful of opium will quiet the animal's agony.

To drench the hog, cut slits in the toe of an old shoe, hold the hog between the knees by the ears, and let him chew the shoe while the medicine is poured in at the top and goes on down through the slitted toe.

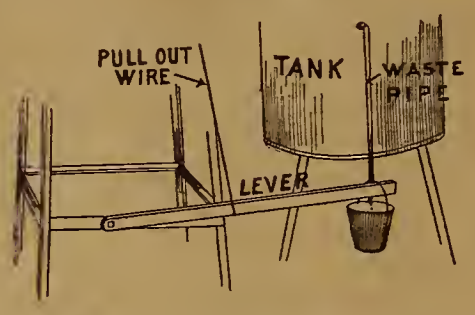
Sheep Destroy Ticks

ANOTHER job for sheep—in the Bitter Root Valley in Montana, which was infested by the tick which causes Rocky Mountain spotted fever, a flock of 1,500 sheep is credited with having destroyed 25,000 adult ticks in one season's grazing. It is now thought that many localities may be cleared of spotted fever by grazing sheep over the ranges.

Overflow Stops the Mill

By H. F. Grinstead

HERE is a device for shutting off the windmill when the tank is full. It is as simple as it is ingenious and was contrived by a neighbor of mine. The supply tank stands within a few feet of the windmill, and when full the waste ran out of a hole near the top. This he fitted with a short length of pipe. Then he made a lever from a piece of 2x4. He bolted one end to the windmill frame so that the other end reached a point under the waste pipe from the tank. The "pull out" wire from the windmill head was fastened to the long lever. Then he hung a large candy bucket near the end of the lever under the waste pipe. The overflow water ran into the bucket, and when it was nearly full, its weight pulled down the wire and stopped the mill. As long as the water remained in the bucket the mill was kept turned out of the wind and would not pump.



To save the work of emptying the bucket, he bored a gimlet hole in the bottom so that it leaked out in about two hours. The weight is thus taken off and the mill resumes pumping until shut off in the same way when the tank is full. The waste water causes but little inconvenience.

The device could be made to work in winter by digging a pit to prevent water freezing in the bucket, and having the waste pipe enclosed and run to the ground.

Will Twins Reproduce?

THERE is a lot of contradictory talk floating around asserting that twin cattle and twin horses will not breed, some contending that only the heifer calves known as freemartins in mixed pairs of twins are barren.

Then, too, there is some contention whether the heifers among triplets or quadruplets will reproduce.

What is the truth in regard to these contentions?

Have the heifers and bulls and mares and stallions in mixed pairs of twins been known to make sure and satisfactory breeders?

Have twin bull calves and twin heifer calves and twin stallion colts and twin mare colts, when mature, proved safe and sure breeders?

Have mixed triplets and quadruplets among cattle and horses proved capable of reproducing their kind?

Some sheep breeders will use no buck to head their flock except one that is a twin.

In the case of swine, the larger the litter the greater seems to be the inheritance of breeding qualities.

Hellebore for Flies

POWDERED hellebore sprinkled over manure piles will destroy the eggs of flies. The best way is to mix one-half pound of the powdered hellebore with ten gallons of water. This will kill all the eggs in ten cubic feet of manure.

Silos That Farmers Like

SEVENTY-SIX silos are not a very large sample by which to judge all silos. But they give an idea of what kinds are popular. This is what K. A. Kirkpatrick of the U. S. D. A. learned from the owners of those seventy-six silos.

Seventy were well pleased with their silos; six were not. Of those six, three should not have built a silo because they were not carrying stock enough; consequently their silage spoiled before they could feed it up. The three others put their silage in too green and expected to feed stock nothing but silage. Consequently they fed too much, with poor results. Of the other seventy, fifty said they would build a glazed-tile or a concrete silo if they built again. Fourteen favored wood staves, one preferred the Gurler silo, two the panel silo, and three were undecided. There were no pit silos in the neighborhood.

Training Horses

[CONTINUED FROM PAGE 6]

subject to unreasoning fear than those of a more nervous and excitable type. In this respect it is well to note that he is a much greater departure from the original type of wild horse, who had always to be on the watch for enemies. So, for instance, a piece of paper blowing in the road is more likely to appear to him what it really is than some weird live thing, ready to strike at his foot, like a venomous serpent.

But the draft horse, sensible and reliable as he generally is, sometimes disgraces himself quite unexpectedly; in fact, a colt is a colt, whether of draft stock or otherwise, and too much should not be expected of him. I was once on a city street with a pair of young Percherons that had never shown much fear of things, when a circus parade came along. They paid little attention to the elephants, the band wagons, or even the shrieking and deafening calliope. But presently appeared a lofty and gilded wheeled structure upon the top of which sat a large lion and beside it the Goddess of Liberty as personated by a weary-looking young woman with one arm resting in friendly fashion upon the lion's neck. My colts became insanely frightened, sprang upon the sidewalk in spite of all my efforts, and wrecked, with a glorious and resounding smash, the show window of a department store—a performance much appreciated by the gazing crowd, who were out for excitement and were getting it.

Blinders Reduce Use of Whip

I have often been asked if the use of blinders is not a needless and foolish practice, and if I do not consider it cruel. To both of these questions I answer, no. The purpose of blinders is not to prevent the horse from seeing things and taking fright at them, but to render him pleasanter to drive. Forward and, by merely turning his head, sideways he can see about as well with them as without them; and it is not always desirable to have him see what is going on in the carriage behind him. No, I don't mean what you and Jennie may be doing when you take her out for a drive; I only mean that if he has the least bit of a tendency to laziness—and this includes a tremendous number of pretty good horses—he will, if driven without blinders, soon get into the habit of driving with his head carried very slightly to one side, with one eye cocked back into the carriage. If his driver reaches for the whip he will detect the motion at once and quicken his pace and continue it as long as the whip is carried in the hand; then, when the whip is put back in the socket, he will slacken up in a very provoking way. The majority of horses drive better with blinders than without them. On the other hand, a great many drive just as well without them, and in such cases, especially if the horse has a handsome head, I always prefer the open bridle. So if your horse goes well without blinders and you prefer an open bridle, by all means use one; it is, I think, preferable where it works well.

But don't abandon blinders because you think them cruel, for, properly adjusted, they give the horse no discomfort or inconvenience whatever.

It seems almost superfluous for me to add that the colt when being broken to harness should of course always wear an open bridle, whether blinders are used later or not, for he should have every opportunity to become as familiar as possible with all the rigging with which he is surrounded, carriage and revolving wheels included.

I have tried here to explain some of the more important points in making timid horses fearless—an important matter for all who use horses, for unless the horse is at least comparatively fearless he is not safe, and the dangerous horse no one wants.

What Others Do

Real Farm Arithmetic

PROFESSOR GENTRY of the state normal school, Springfield, Missouri, offers some original ideas as to the kind of problems that country-school arithmetics should contain. Here are a few:

"A farm wagon if given shelter when not in use will last for about fifteen years. When not in shelter it will last half as long. What is the average annual loss on a $55 wagon that stands out in the open?"

"A kitchen that is poorly arranged requires a mother to take one hundred steps more a day in preparing meals than she would in a well-arranged kitchen. How many unnecessary steps does she take in a year? How many miles is this, allowing 20 inches to the step?"

"If a quail in the course of a year eats 25 cents' worth of grain and destroys two dollars' worth of harmful insects and weed seeds, how much has a farmer injured himself by killing three pairs of quail?"

Rather more sensible—isn't it?—than calculations as to the weight of the pyramids of Egypt, or the distance reached below the water line of an iceberg that sticks up a hundred feet into the air?

Why Hens Didn't Lay

By E. L. Vincent

NOT long ago a friend of mine, not a thousand miles from our place, told me this story:

This past winter our hens just about dried up on us. We gave them the best care we possibly could after winter set in, but all through the months when eggs were bringing the most, and feed was the highest, we brought in practically no eggs at all. When you think what it means to feed and care for 700 or 800 hens that way, seeing the money go out by the pocketful and not a cent coming back, you can imagine that we were pretty blue.

But we have found out what was the trouble. We hatched a fine lot of pullets a year ago and were sure they would be right "on deck" with their eggs through the winter season, but they too went back on us. The why of this was that we were busy about other things and did not get our pullets in out of the trees and odd places where they had been roosting, until all of a sudden there came a cold snap. They were thoroughly chilled, and now we think that is why they did not begin laying till almost spring.

Then, too, on account of that same having "so much else to do," the old hens were neglected in the fall and did not go into winter quarters as they should. Add to this the fact that we did not send away the old hens in the fall as we ought to, and you have the secret of our loss. It was a big loss, and will take us some time to get back where we were.

There are a good many of us who would do well to take this story to heart. The care we give our hens from now on, every day till winter, fixes the measure of our success during the cold months.

Hens must be brought up to winter in prime condition.

It is the price of success.

What are the Profits?

KEEPING books pays as well on a farm as in a bank, a railroad office, or a factory. Many large farms have a regular bookkeeping department. The average size farm does not need such an elaborate system of account books any more than it needs three or four binders, seven cream separators, nine churns, or five hay loaders. The size and detail of the system depend on the acreage of the farm and the amount of business the farm does.

Some person on the farm can learn how to conduct a set of books for the farm. Then only a few minutes a day, or once a week, will be needed to keep a set of farm account books.

Here are several important things a farmer knows if he keeps a set of books: How many dollars' worth of foodstuffs sold off the farm last year? What did it cost the family to live? How much money was cleared on the farm last year? What crops are not paying? How did this year's profits compare with last year, two years ago, five years ago?

A farmer will be able to check up every item of farm expense such as seed, labor, repairs, expense of keeping different live stock, cost of the services of the men employed on the farm, and the expense of the feed and care of the farm horses.

A set of books properly kept will enable a farmer to keep account of the acreage sown to crops, the cost of fertilizer, expense of planting, cultivating, and harvesting the crops, and depreciation of farm machinery.

The farmer with a set of books will know how to keep time cards for every team of horses, and every man for the time they work on certain fields. He will have an accurate account of the poultry, cattle, and hogs, their cost and the value of their product to the farm.

Another pleasing and profitable thing about a set of farm books—one can take an inventory at the end of the year of all the live stock, the implements, the buildings, the grain on hand, and all of the equipment, and know just where the farm stands financially.

A. K. MACK of Blair, Oklahoma, found cotton-growing a failure as a business. He changed to sweet potatoes. On 25 acres of sandy land he grew 2,468 bushels of sweets, which he saved in an improved potato house. He regards getting out of his rut as a success.

PROFESSOR HAECKER of the Minnesota Agricultural College finds that the grade or scrub cows kept on the college farm have for ten years averaged a return of enough more butterfat than the average of the State to amount at present prices to $14 a head per year. This is the amount they give for better than the average care. Fourteen dollars a head will pay for some painstaking.

The Scotch Herd

THE black-faced Highland sheep are at home in the heather-topped hills of Scotland. Though wild and independent in temperament, they respond well to the care the Scotch herd gives them—and the Scotch seem to know "just how."

DR. J. A. CLUTTER of the Texas Agricultural College insists that the amount of cottonseed products fed to cows in the cotton belt injures the quality of both cheese and butter. The butter is tallowy and sticky. A cow should not receive over three pounds of cottonseed meal daily, and that should be mingled with other feeds, especially good roughage, corn or sorghum grains.

Your Beef Ring

FRESH BEEF! How to have it regularly on the farm is a problem. Isn't it odd that the people who grow the beef eat less of it than anyone else?

If we could kill only a quarter of beef at a time, now, what a blessing it would be! But we can kill even less than a quarter by organizing a co-operative Beef Ring, or a Fresh Beef Club, of farmers who will slaughter and divide up. Means cheaper beef than buying it at the butcher's shop.

We've printed accounts of such clubs in various parts of the country; but the question is, has the doctrine taken hold?

Do you know of any successful Beef Ring? And if you do, do you belong to one? How are you pleased with the results? Write and tell us. Experience is what we want, not theory. Anyone knows that the theory looks good, but how does it work? What are the necessary conditions to make a Beef Ring a success?

Cement Roofing Tile

CEMENT tiles for roofing are a common thing in Sweden, and have lately made some progress in this country. The common size of tile is 9 inches wide by 15 inches long. They are made of a wet mixture of one part of cement to two parts of sand. The weight of the roof is from six to seven pounds per square foot. Pigments may be mixed with the cement to give any color of roof desired.

A Guaranteed
Worm Expeller

GILBERT HESS, M.D., D.V.S.

Worms are responsible for nine-tenths of your hog troubles at all seasons of the year, but especially in the fall. Do not be misled, thinking your hogs have some other ailment. Nine times out of ten their trouble is worms. My Stock Tonic will positively expel these worms and keep your hogs in a healthy condition, thereby enabling them to resist disease and lay on fat. Feed my Stock Tonic to your hogs right now.

Dr. Hess Stock Tonic

Makes Stock Healthy—Expels Worms
25-lb. pail, $1.60; 100-lb. sack, $5.00

Why pay the peddler twice my price?

It isn't enough to rid your hogs of worms, mark you. You must also tone them up and put them in such a clean, vigorous condition as to make worm development impossible. That is why my Stock Tonic not only contains vermifuges to expel the worms, but it also has in it tonics, blood builders and laxatives to build up and regulate the animal's system.

My Tonic is highly concentrated, as the small dose quantity will prove, and as I have no horses, wagons and salesmen to pay for, I can sell you at rock-bottom prices through your local dealer.

My Stock Tonic also aids digestion and assimilation, makes your hogs and other stock thrive; it is the result of knowledge which I have acquired as a veterinarian, doctor of medicine and stock raiser. Formula on every package.

So sure am I that Dr. Hess Stock Tonic will keep your stock healthy and expel worms, that I have authorized my dealer in your town to supply you with enough Tonic for all your stock and, if it does not do all I claim, just return the empty packages and get your money back.

25-lb. pail, $1.60; 100-lb. sack, $5.00, smaller packages as low as 50c (except in Canada and the far West and the South). Send for my free book that tells all about Dr. Hess Stock Tonic.

DR. HESS & CLARK, Ashland, Ohio

Dr. Hess Poultry Pan-a-ce-a

A splendid tonic during the moulting period. It gives the moulting hen vitality to force out the old quills, grow new feathers and get back on the job laying eggs all winter. It tones up the dormant egg organs and makes hens lay. Also starts the pullets to laying. Economical to use—a penny's worth is enough for 30 fowl per day. 1½ lbs. 25c; 5 lbs. 60c; 25-lb. pail, $2.50 (except in Canada and the far West). Guaranteed.

Dr. Hess Instant Louse Killer

Kills lice on poultry and all farm stock. Dust the hens and chicks with it, sprinkle it on the roosts, in the cracks and dust bath. Also destroys bugs on cucumber, squash and melon vines, cabbage worms, slugs on rose bushes, etc. Comes in handy sifting-top cans, 1 lb. 25c; 3 lbs. 60c (except in Canada and the far West). I guarantee it.

If you have a sick or injured animal, write me, giving symptoms, and I will send you prescription and letter of advice free of charge. Send 2c stamp for reply.

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FARM AND FIRESIDE, SPRINGFIELD, OHIO

Turn Limestone Into Dollars! (18)

If you are the owner of limestone land, why not turn the limestone into dollars? Those lime rocks are worthless in their present state. Why not pulverize them—make them enrich your soil and make money grinding for your neighbors?

The Jeffrey LIME PULVER

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FARM and FIRESIDE
THE NATIONAL FARM PAPER
Published every other Saturday by
The Crowell Publishing Company
Springfield, Ohio
Branch Offices: 381 Fourth Avenue, New York City; Tribune Building, Chicago.
Entered at the Post-Office at Springfield, Ohio, as Second-Class Mail Matter.

Subscription Price
One year (26 numbers), fifty cents. Three years, one dollar. Extra postage for Canada, twenty-five cents per year.
About Advertising
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Advertising rates and regulations furnished upon request.

HERBERT QUICK, - - - - - - - - Editor

September 11, 1915

Colorado Commission Men

COLORADO has passed a law for the regulation of commission men. Licenses are issued, and bonds required for the faithful discharge of the commission man's duties. There is provision for the investigation of complaints of shippers or others interested in the way the commission men do their business. The law is no more stringent than those usually in force governing bankers, and there seems to be no good reason why farmers should not ask the legislatures to pass similar statutes everywhere.

The good commission men should favor the law. The bad certainly will not.

Practical College Work

THE first agricultural colleges were organized with the plan in view of giving the students practical farm work and an agricultural education at the same time. It was intended that the students would spend part of their time working the college farm, and the rest in study.

It did not work. It failed because there was not enough work of any sort for all the students, and not enough of a variety to give to the things taught the desired connection with life. So we finally settled down to the present plan. Under it the college farms are run by hired help, and the students work in class-rooms and laboratories.

This falls far short of real agricultural education. It has, however, become fashionable—so much so that in some colleges a majority of the students are from the cities.

Is this the last word in agricultural college training? Isn't there something in the original idea which is better?

In the University of Cincinnati all the engineering students work two weeks in the class-room, and two in machine shops, factories, on railways, and in chemical laboratories. Two weeks they study theory, and two they live the theories they have studied. When they graduate they know not only the books but the tools of their profession.

Why does not some agricultural college start the half-time system with its students? Such a system would winnow out those boys who are merely "going to college" and have taken the agricultural course without any real vocation for farming. Half the students would be working on farms, while the others were studying and attending lectures, and the shifts would change every two weeks. Boys who could not make good on the farm as well as in the class-room would get no degree. We should get real farmers out of the agricultural colleges. To be sure, we do get some real farmers now, but the percentage is not what it should be.

The Cincinnati engineering students, working half the time on jobs and getting pay for doing it, make as much class-room progress in five years as they would do in four if they stayed about the university all the time. There is no reason for thinking that agricultural students on half time could not do the same thing. This would mean a clear saving of a year and a half of class-room work, and a better man at the close of the course. Besides, it would make it easier for the real farmer boy to earn his way through college, and incidentally render it harder for the mere surface student to get through.

Money to Hold Cotton

MR. W. G. P. Harding, a Southern member of the Federal Reserve Board, recently read at a meeting of the Alabama Merchants' Association a letter from President Wilson on the financing of the cotton crop which is of interest to the entire country, the prosperity of which depends so much on the marketing of this our greatest single crop.

The President asserts that the country banks will be able to get money for from four to four and a half per cent, and adds, "I think we can confidently expect that the banks in the cotton States and in the agricultural regions generally will content themselves with a rate of not more than one or two per cent above the rate which they themselves pay."

This refers to the agricultural regions generally. It is to be hoped that the President's confident expectations will not be disappointed.

As to cotton, the conditions should be even more favorable if, as Secretary McAdoo has been quoted as saying, a sum of not less than $30,000,000 will be placed in the banks of the South without any interest at all if necessary to handle the cotton crop. The crop, with what is on hand, will be about 22,500,000 bales—which is 250,000 bales more than the normal demand. The demand from Germany and her allies cannot be supplied on account of the declaration of contraband issued by Great Britain and concurred in by her allies; but the use of cotton for making ammunition may make the consumption outside of the central empires even greater than normal if the trade in munitions goes on as now seems likely. There are warehouse facilities for about 12,500,000 bales, or more than half the total crop and the amount on hand. With financial arrangements under which the growers are enabled to borrow at five or six per cent on warehouse receipts, there ought to be no difficulty in holding the crop and feeding it to the market as it can be taken at fair prices.

Spreading Hog Cholera

THE farm is traditionally a place for free-and-easy relations. This is not so in other countries, where trespass is a crime, and entrance on the premises of another a serious matter; but the American farmer feels embarrassed when even necessity calls upon him to limit the freedom of his neighbors, or even of strangers, in passing and repassing on and across his fields.

And yet, in these days of foot-and-mouth disease, hog cholera, and other infectious diseases in live stock, all should see the farmer's point of view and refrain from trespassing. In sixteen counties the Government has instituted an investigation to find out how hog cholera spreads. It was found out that in more than twenty-three cases out of every hundred the disease was carried from farm to farm by visitors. In one county, 29.6 per cent of the outbreaks were produced by visitors. A great many of them came from visits made in exchanging work, and not through trespass.

This is very important. Try to understand that the farmer who asks you not to pass across his premises may not be a crank. He may merely want to keep out disease. If he asks you to stay away from his place after there has been disease on yours until you have been thoroughly disinfected according to the best scientific advice, he is doing exactly the right thing. If he keeps his own work horses away from the places where disease may be touched, do not think badly of him if he asks you to keep your horses off his place unless they have been disinfected, if they have been in a danger zone. He has probably studied this matter of infection more closely than you have, and is merely wise and careful, not cranky. You should do the same thing.

PHOTO BY ARTHUR WOODWARD

Once a King

Missouri's Land Bank

THE people of Missouri will vote next November on an amendment to the constitution of the State establishing a state land bank. Thus goes on the work of setting up a distinctly rural scheme of credit in one State after another.

The Missouri plan will, no doubt, be supported by the farmers of the State. It seems a businesslike and sensible plan. It sets up the Missouri State Land Bank, of which the already elected state bank commissioner shall be manager. It will be under the control of a board of governors composed of the governor, attorney-general, secretary of state, state auditor, and state treasurer.

Farmers who want loans for the purpose of increasing the production of their land, making useful improvements, paying off liens or mortgages, or taking care of part of the purchase price will be able to get money at just the rate of interest the state bank can arrange for, plus one half of one per cent. The one half of one per cent goes into a reserve fund.

The State will advance a million dollars to start the plan; but as the interest on the loans will be at a rate higher than the State will pay, there is no subsidy in the real sense of the word.

All the mortgages issued and the debenture bonds based on them, as well as the property of the bank, will be exempt from all taxes. This ought to give the farmers the lowest possible rate of interest.

The lands will be examined by paid appraisers. The land bank will sell debenture bonds based on the loans. The loans will run from five to twenty-five years, and enough will be paid on the principal at each interest day so that at the end of the period a man who has kept up his payments will be free of the debt. The provisions for foreclosure are not much stricter than those now in force, and few farmers will object to them.

Some farm papers have condemned this scheme on account of the provision for the State's starting the bank on a million dollars of state funds. This has been condemned as "socialistic." Epithets, however, are not of much economic value. Mr. Myron T. Herrick, who has never been accused of radicalism, says: "At the inception of land-credit institutions on the continent of Europe the tendency of legislation was and still is toward governmental subsidy and control where the borrowers are exclusively farmers or small holders." And it is precisely on the continent of Europe where these systems have been most successful. The activities of the State proposed in the Missouri law are nowhere near as socialistic as our system of either public schools or public roads.

Our Letter Box

Is Sweet Clover a Delusion?

DEAR EDITOR: I used to read your valuable paper in Pennsylvania when I was young. Now I am still reading it in Nevada with the same interest. I've often thought I would write and tell you how much I enjoy your farm topics, etc. There is one thing that amuses us, however, and that is the talks on the value of sweet clover. Here it grows everywhere wild, tall, and rank. Even the birds of the air may lodge in its branches, but nothing will eat it willingly. Even sheep eat sagebrush in preference. Bees gather honey from it; otherwise it is a nuisance. So we can't understand why you give time and space in your paper to advertise it. Here it's a snare and a delusion.

MRS. J. J. WALKER.

EDITOR'S NOTE: After the Nevada people learn the uses of sweet clover they won't laugh at it any more. Every locality has to learn about this very useful forage plant. Once it was a weed everywhere.

Joke on Doc

DEAR EDITOR: In two numbers some of your readers from the southeastern part of the States are complaining over the excessive fees charged by their physicians. To show the contrast, I will tell what happened to a neighbor some time ago.

The neighbor was homeward bound from a long journey. As soon as he got off the train he went to the livery barn to be taken home, but for some reason he came out and ran to a doctor's office.

"Doc," he said, "can you come to my place right away?"

The doctor said, "Yes, I guess so."

"But I want to ride with you, Doc."

"All right," said the doctor, and they started.

When they got to the gate my farmer friend jumped out first and said, "How much do I owe you?"

EW

"Why, what's the matter? My fee to your place is $3."

"That's what I thought," said my friend. "I have been away and wanted to get home in a hurry, and that blamed livery man wanted $4 for the trip."

L. A. R., Iowa.

"The Brown Mouse" in New Zealand

FARM AND FIRESIDE: My congratulations on the quality and interest of the story "The Brown Mouse." Immediately upon reading the latest instalment to hand—Chapter XXXIII, in which Jim Irwin outlines the policy for the people of his district—it occurred to me to tell you what is in actual practice in *this* town of Feilding and district in the way of rural education.

Feilding is set in the midst of rich and prosperous bush-cleared agricultural and pastoral country which was virgin forest thirty years ago. New Zealand's education system is conducted by the Education Department, with the whole Dominion divided into eight districts, each of which is governed by an education board with powers almost independent of the department, which (under a vote from Parliament) provides the money of all our boards. The Wanganui Board (which has Feilding under its direction) is the most progressive and enterprising in the matter of rural education. For instance, in our two schools in this town (Feilding has a population of under 4,000) the boys in the two upper classes, ranging in age from eleven to fourteen years, have classes in which they are taught all work that is likely to become their duty should they go upon the land. They are instructed in the use of the Babcock test (some of our boys have actually gone back to the farm and taught their fathers and mothers just those things that Jim Irwin's scholars taught their folks), in repairing saddlery, in testing soils, in shearing and classing wool, in the points of horses, sheep, and cattle, in preparing and planting crops of potatoes and cereals.

The practical is blended with the theoretical by the expert instructors' taking the classes to neighboring farms and orchards, the owners of which encourage this highly useful department of school work.

The lads are as keen as razors for this work, in connection with which they go into camp (under canvas) twice a year upon big farms, where the most expert and experienced farmers from near and far come together to give the boys instruction on the spot with the different breeds of sheep, cattle, pigs, and horses. During the period of encampment the lads become coat-off farm laborers, looking after and mixing with all the animals. Open-air lectures are given morning and afternoon, and other demonstrations in the evening; and at the end of the camping the boys are put under an examination by farmers.

The greatest success has attended these encampments, which grow in favor year by year with the boys and their instructors, while even the most prejudiced of old-time farmers are now declaring that this system makes for worth-while education, so that they wish they could start again as boys with these advantages.

TOM L. MILLS.

Pretty Tough!

FARM AND FIRESIDE: Your valuable paper of July 31st published a letter written by an Alabama man in regard to doctors' charges. I would like to give my experience. I live in the country eighteen miles. The doctor's fee for each trip is $1 a mile. He hires an auto at $9 a trip. This is charged to me also, making $27 a trip. I also had an unlicensed nurse that charged me $25 a week. This is pretty tough on a person of small means; don't you think?

C. O. D., Montana.

Rye Wins Mustard Fight

EDITOR FARM AND FIRESIDE: I read with interest the articles published in your paper on "How to Kill Mustard." Spraying may be the best method even if it does cost $1.65 per acre per year, or more. I won't say it isn't, but we are killing mustard out of a field by sowing spring rye, cutting the first crop when it is in blossom for hay and the mustard is also in full bloom. Then later on, when in the proper condition, we take the second cutting, up here in Montana where the seasons are short. It seems to me you could have good cow pasture for your third crop in Ohio and Indiana where the seasons for growing are longer.

If one puts the rye hay in stack it should contain more moisture than timothy hay does for stacking, as it is wiry.

The ground should be cropped this way for two or three years, using clean seed each time.

I am writing this hoping it will help someone who can ill afford the $1.65 or more per acre for spraying.

MRS. NETTIE D. HALEY, Montana.

Uses Velvet Beans

DEAR SIR: I read an article in your issue of July 31st which said that Mr. Wood Tebbe of Iowa "enjoys the tick article." Please tell Mr. Tebbe we don't need their corn to fatten our beeves. We use velvet beans. Turn the cattle on them in the fall and they come out hog-fat.

A. L. S., Alabama.

Sun-Kissed Tomatoes

DISEASE spores that lurk in shade and moisture are the greatest enemies to the health and productiveness of tomatoes. Given the right conditions, one vigorous vine of a productive variety of tomatoes will produce more marketable fruit than a half-dozen disease-stunted ones.

A little plot of two or three square rods devoted to tomatoes trained on a trellis similar to the one here pictured will produce tomatoes sufficient for a half-dozen families. This trellis is made of 2x3-inch lumber and stands about five feet high. The upright supports for the horizontal crosspieces are driven into the ground just far enough to keep the frames rigid. The plate pieces are fastened to the uprights with a single nail so that the frame can be quickly taken down and stored under cover at the end of the season.

Trellis-grown tomatoes should not be set closer than four feet apart each way, in order to admit plenty of sunlight and to make cultivation and picking convenient.

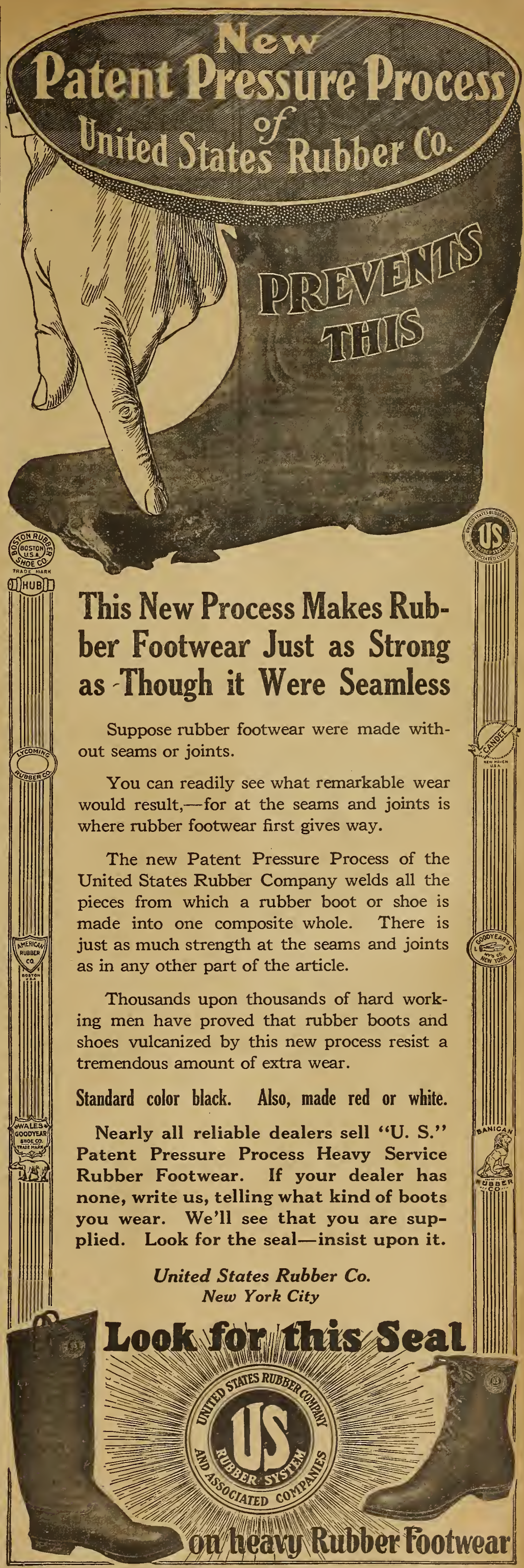
Interesting Books

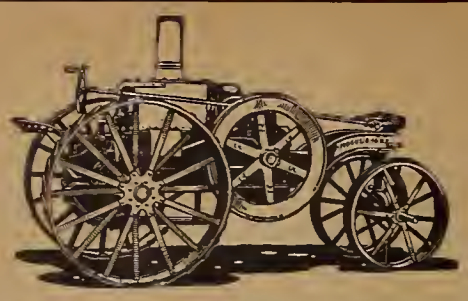
THE BROWN MOUSE, by Herbert Quick, is known to most of our readers as a simple, interesting story of the way an obscure young man on an Iowa farm took hold of a school district by its four corners and made it known to the world as a good place in which to live. It is the first story ever written dealing with the rural schools as things worth serious consideration. Prominent educators have expressed the opinion that it should be read by every person interested in better rural schools—parent, teacher, superintendent, or member of school boards. It is published by the Bobbs-Merrill Company of Indianapolis, Indiana. Price, $1.25.

A NATIONAL HIGHWAY MAP is ready for distribution by the National Highway Association through A. L. Westgard at National Headquarters, 18 Old Slip, New York City. The map is 29 by 18 inches, and is printed in colors on a high grade of paper. It shows the main traveled motor routes with special emphasis given to the long-distance highways. A charge of four cents in stamps is made to cover mailing.

POULTRY DISEASES AND TREATMENT, by E. J. Wortley, not only provides for the treatment of diseased fowls but helps the poultry keeper to diagnose the principal ailments that make his life a burden when contagious diseases get among his flock. Vigorous and healthy poultry is absolutely indispensable to a profit from the business. This little book of 125 pages, finely illustrated, is one of the best. Orange-Judd Co., New York City. Price, 75 cents net.

Hudson Maxim is the inventor of the multi-perforated powder grain which gives absolute control of the burning of smokeless powder. This is a great military invention, and with other devices of his has justly given him fame and wealth. He is also a very interesting writer. His new book, DEFENSELESS AMERICA, is called by his publishers "A Call to Arms Against War," and is well worth reading by those who can separate his observations on things on which he is an acknowledged expert from those on subjects which he only thinks he knows. It is a pity that he could not have written on the need for national preparedness without filling his pages with so much inconsistent and bogus philosophy and political economy. The book is always interesting and well worth reading for the person who can run a mental cream separator to eliminate the cream from the skim milk. Hearst's International Library Company, New York. 318 pages. Price, cloth, $2.





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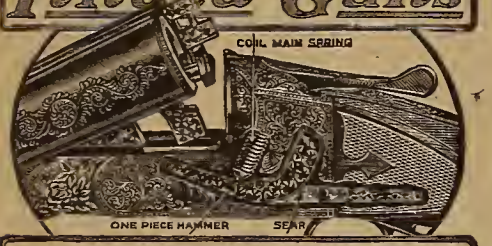

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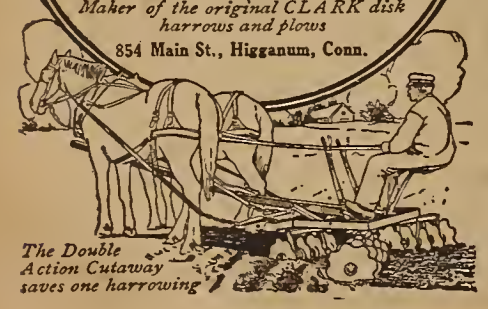


The Double Action Cutaway saves one harrowing

Farm Notes

Motor Cars That Stop

By W. V. Relma

ALL kinds of automobiles are driven by all kinds of people, consequently all kinds of automobiles are coudemued and abused—sometimes with just cause, but usually without.

The uew driver of an auto is usually so eager to drive that he fails to take proper precautions against having trouble. In fact, he frequently takes chauces au experienced driver would not risk.

Recently I stopped upon the road to examine a tire. A car drove up and stopped. The driver inquired the name aud address of the nearest service station for his car, adding the information that his car had stopped six times within au hour. I offered to investigate his trouble. He stated that the engine had become exceedingly hot aud then had stopped. That indicated a lack of sufficieut lubricatiug oil or a proper amount of water in the radiator. These points were checked up and found to be all right. Then we started the motor and removed the hood, and the cause of the trouble immediately became apparent. The cooling fan at the front of the motor was not runuing. The belt had become loose. After tightening this (which was a matter of only a few minutes) the persons were able to continue their ride. If this driver had not been well supplied with lubricating oil he would in all probability have ruined his motor. He had neglected to inform himself on the fuudameutal principles of car-running.

Motors Resemble Human Beings

If a car is equipped with a fan it is essential that the fan run, and coutiuue to run while the motor ruus. A motor is no more to be blamed for stopping when overheated thau a human beiug.

Some time ago I encountered an acquaintance stalled along the road. He was red, perspiring, and nearly exhausted from almost a half-hour's work at the crauk. He of course unbosomed his troubles freely while I made au inspectiou. We found he had ignition trouble of a character impossible to remedy upon the road. So I got out my trusty rope and we started upon the ride which makes the unfortunate motorist feel like a monkey.

At the garage his trouble was soon patched up iu a temporary manner, because the owner was unwilling to buy the necessary parts to effect a permanent repair. The whole point to this particular incident is that while this man knows that the repair is only temporary, and that he will eventually get into the same predicament again, he cheerfully continues to ride around on the ragged edge of trouble. When trouble comes he will no doubt expect sympathy and assistance from the passers-by.

It is really much easier to make adjustments and repairs in the owner's garage than upon the road. An inspection of the car before starting upon a run, usually repays well for the effort. If a tire has a peculiar or unfamiliar bulge or severe cut, remove the tire and find out how bad it really is. This precaution will possibly prevent a bad blowout or a flat tire at a most inconvenient time.

A neighbor had a tire which required rather frequent inflation. This would iudicate a "slow leak." He started upon a trip. The long-continued ruuning soon affected this tube aud it went down. Upou removing it he discovered that a patch upou the iuner tube had become loose. The heat generated by the continued running had caused this, although it had evidently leaked before, as indicated by the necessity for frequent pumpiug up. My ueighbor, after removing the tire, discovered that he had no extra tubes, no patches or patching material, and that he had rim-cut his casing by running upon it while it was flat. He proceeded to the next small town "ou the rim." In this town the size tire he required was not handled, and he bought a differeut size. This, of course, will be hard upou his machine, as he now has two different sizes of tires on his rear wheels. It may cause rear-axle trouble. In auy event, his laziness or lack of foresight will cost him the price of an odd-size casiug.

Vulcaniziug outfits are so cheap and efficient that there is no excuse for taking chances with leaky inner tubes.

However, if such trouble does arise and there are no inner tubes and no patches, there are other ways of getting home or to a garage. Rope may be wrapped arouud the bare rim and the car may be run slowly in that way. Or the iuuer tube may be removed and the outer casing stuffed with rags, straw, or anything to prevent its being flattened.

In Failure or Success

THE test of machinery is in the using thereof. Did you within the last year or so buy a new machine, or a machine which was new iu your neighborhood? If so, the farmers would like to hear from you. Pass the word along aud tell us your views on the machinery question. If you had trouble with a machine—any machine, from a tractor to a hand cultivator—it may be that some of our innumerable readers can tell why you failed. If you succeeded, the story of how you did it may help some failing brother to make good with the same tool. And if you are not a brother, but a sister who has had experieuce with some new aid to comfortable work in the home, we shall be a little better pleased than otherwise.

Wheel Didn't Run Straight

HERE we have a tire ruined, not from long mileage but because of faulty alignmeut of the wheels, or from wheel irregularity. The tread of the tire has been actually ground off by side draft. This sort of thing can occur with a uew tire in a few huudred miles. Sometimes a bent axle will cause it, or a worn hub disk, but the usual cause is a lack of proper alignment.

A good way to test the alignment of wheels is to stand the car on a flat, level surface, and with a metal tape measure

The tread has been actually ground off

between the felloes on the iuside of the wheels directly iu front of the axle. Turn the wheels around about a quarter of a turn and measure again. Do this until you have taken four measurements. They should vary less than a quarter of an inch. But do not make the mistake of measuring without turning the wheels around, because the front wheels are usually canted upward at the top for the purpose of making steering easier.

Lost Person Found

THE United States covers a great deal of ground, but, thanks to the friendly spirit of FARM AND FIRESIDE readers, several people advertised for iu the Lost People departmeut have been restored to their friends aud relatives.

The last instance was a Tennessee man who was fiually located in Wisconsin. His sister writes us:

KIND SIR: I received your letter, and wrote to Orfordville, Wisconsin, and found my brother. I received a letter from him to-day. You don't know how glad I was to hear from him, for we were thinking he might be dead.

I don't see how we can get along now without FARM AND FIRESIDE.

A BUILDING without lightuiug rods is nine times as likely to be struck as one with lightuing rods. This is accordiug to insurance-company records.

THE power of wind is measured by the cube of its velocity. A wind blowiug ten miles an hour gives a windmill eight times as much power as a five-mile wiud.

THE United States Forest Service people poison pocket gophers with pieces of sweet potato seasoned with a preparatiou of strychuine and sugar. These gophers do uo good anywhere.

Straw Stacks Worth $50

IT HAS beeu fully demonstrated that the straw produced on tweuty acres of average wheat has a value of $50 to $75, when spread on the land, iu its fertilizing value alone, to say uothing of the advantageous effect of the straw as a source of humus. The ashes left after buruiug have a mineral value of less than five dollars in a straw stack from twenty acres of average wheat, even if the ashes are saved and spread over the land to the best advantage.

Why burn the straw piles?

Gas-Engine Developments

By D. S. Burch

AT FIRST the only practical way of using a gas engine to run machinery at different speeds was to install a line shaft. But speeds now are controlled more simply. Oue company makes a specialty of a general utility engine provided with a geared shaft which runs at about a third the speed of the fly-wheel shaft. You can use pulleys either two, four, or six inches in diameter on the outside of the fly wheel; and at the opposite end of the shaft more space is provided for larger pulleys. Besides that, two different sizes of pulleys can be used at either or both ends of the geared shaft. Counting the outside of the fly wheel itself, which is wide enough to be used as a pulley, about ten different speeds can be had by direct belting—that is, without a line shaft. This little engine weighs 250 pounds and sells for about $70. Provisiou is made for an outdoors fuel tank so the engiue can be operated indoors without the dauger of fire.

It is light enough for two men to carry around, or one man can handle it ou a small truck.

For starting machinery slowly, several good friction-clutch pulleys have been developed. One is made especially for starting cream separators. aud is called a speed pick-up pulley. A pulley of this kind costs about $3.50.

A number of engines are also equipped with governors which control the speed within a 25-per-cent variatiou, which means that the slow speed is about three fourths as great as the high speed.

Belt Drives are Popular

Belts continue to be the principal method of driving machinery, but for some work sprockets and a chain-drive are used. Another way is by direct connection to the fly-wheel shaft by means of a flexible coupling. This is compact aud economical for such uses as driviug au ensilage cutter. There is no belt to slip or come off and, besides, a flexible coupling is iudependent of weather conditions which affect belts.

A striking development in gas engines is light weight. A four-horsepower engine can now be had that weighs less than 200 pounds, and an eight-horsepower two-cylinder engine need not weigh over 320 pounds. That makes ouly 40 pounds to the horsepower. Light engines of this kind are excellent for putting on heavy-duty machines such as corn pickers, graiu and coru binders, headers, aud beet harvesters.

Guarantees have become much more liberal. For instance, one company not only guarantees its engines to run ten years with good care and to replace defective parts within that time, but also guarautees the power from certain fuel. Its four-horsepower engine, for instauce, is guaranteed to develop its full power for ten hours ou four gallous of gasoliue. Thus the purchaser has assurance that the fuel cost will not be excessive.

Magnetos are the favorite form of ignition, and a good one will outlive most engiues. This does away with battery boxes and is altogether a more dependable method, besides making the engine simpler. At preseut most of the magnetos are considered extra equipment and add arouud ten dollars to the cost of the engine.

Systems of Cooling

Cooliug systems have not changed greatly. One compauy provides for either water or air cooling with the systems interchangeable, so that when freezing weather comes the air-cooling system can be used, elimiuating all danger of freezing. Another engiue is guarauteed for life against breakage by freezing. The cooling jacket is so constructed as to make breakage from that source improbable.

In accord with the "safety first" campaign, gears are uow generally enclosed which also keep out dirt. Lubrication is largely automatic. Oue compauy has a water-cooled engine in which the oiling tube passes through the water chamber. Thus the oil is always warm when the engine is runniug aud consequently feeds easily.

Vertical valves seem to have gained strongest favor. They wear uniformly all around, aud even after loug use fit snugly.

Sizes of gas engines from 1½ to 12 horsepower are most popular. Anything less than 1½ horsepower is rather small for practical use, aud above that size, tractor competition begins to be felt.

Small tractors now cost ouly about a fourth more than stationary engines of equal power and quality, and besides doing the field work, handle any belt work except possibly threshiug and ruuning large ensilage cutters. They have also the advantage of moving themselves from one job to another.

E

"Spindling Sprout"

IF YOU plant potatoes which produce weak and spindling sprouts, you will not secure a good crop.

There is a disease, found almost all over the world, known as "spindling sprout," which most of us have noticed both in the field and in the cellar. We have seen the seed potatoes with the weak sprouts, and we have seen hills in the fall which made nothing but little potatoes.

This disease is hereditary. Doctor Hall, at the Geneva Station, planted forty of these potatoes, and the yield gave nothing but small potatoes, and only about half a pound to the hill.

It is supposed that this weakness is produced by dry hot weather in the growing season. Potatoes like a cool, moist climate, and they run out in hot and droughty conditions. Before planting give your seed a sprouting test—say six weeks before planting. Sprout some of the seed in a warm dark place. If all potatoes produce strong sprouts, it is safe seed to plant. If some of the potatoes bring the spindling sprouts, it is as unsafe to plant them as it would be to plant corn a good portion of which does not sprout well.

If the seed is poor, secure better seed. This may be obtainable in the neighborhood, or it may be necessary to send to some Northern climate for it.

Mr. Bryan's Drink

AS KING ALCOHOL side-steps to make place for the drink that invigorates but does not befuddle, the grape is coming to have competitors from which to make the unfermented drink.

One of these is the famous Loganberry that grows with great luxuriance in favorable areas of the Pacific Coast States.

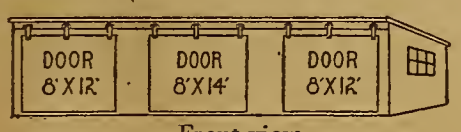
In the South the Muscadine class of grape is coming into favor as especially delectable in flavor of its unfermented juice. The juice of this Scuppernong variety in particular becomes a great favorite when once the imbiber acquires a taste for its unusual flavor.

The outlook is for this unfermented juice industry to develop to immense proportions in the near future. Already the output of grape juice and similar beverages has made remarkable growth.

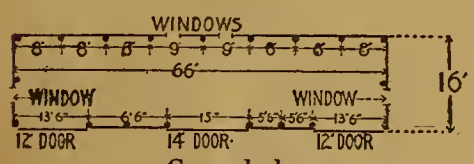
No doubt the juices of certain varieties of plums, apricots, prunes, apples, and some of the less acid citrus-fruit juices will join the unfermented drink list to the great benefit of the fruit-growing industry and the consumers.

Safe Machinery Storage

A PROMINENT manufacturer of farm implements made the statement the other day, "The better off a man is, the better care he takes of his farm machinery." And if you think this over a moment you can probably recall instances of your own experience which verify this statement. In other words, a good business man takes care of what he buys.



Front view



Ground plan

The machinery shed here illustrated can be built with ordinary farm labor. It is 16x66 feet. The plans are drawn from a real shed which has been in actual successful use several years. It is built on posts. Those in front are 10 feet above ground, and in the rear 8 feet. All are set 3 feet in the ground. No frames or braces are needed. The bottom girt is a 2x6, the middle one a 2x4, and the top girt, which is also the plate, 2x8.

The rafters are 2x6's set 3 feet apart on centers. The sheathing is 1x6 lumber placed vertically, and the roof is, in this particular case, corrugated iron; but any good roof will do.

The two rolling doors on the end are 12 feet wide by 8 feet high. The center door is 14 feet wide. These doors roll on a continuous track running the entire length of the shed. A 2x8-inch plate and a 2x8-inch girt are used just above the doors to carry the weight of the doors.

Four windows, all two feet square, are provided—two at the ends and two in the back.

The ground on which the shed is to be built should be well drained, and at least six inches higher than the surrounding ground so water will not run in. Paint the shed to match the other farm buildings.

E

ON JUNE 5th, for the first time in two years, there was not a single droughty spot in Missouri.

How to Know Ripe Melons

TO GET the fullest flavor and melting-in-the-mouth effect in muskmelons and watermelons, they must remain attached to the parent stem until a certain stage of development is reached, or when the life current ceases. To know this stage to a nicety one must have "melon sense."

It is more of a trick to know this stage in a watermelon than to know when the muskmelon is fit.

Watermelon that is still undeveloped will show quite a white color where the melon rests on the ground. When ripe or about fit to pick, the color becomes a lemon or creamy tint. There can generally be heard a crackling sound at this stage when the melon is pressed with considerable force.

Generally there will be found a tendril on the vine near the stem. This tendril remains green as long as the melon is growing and turns brown when the growth is complete.

Muskmelons when about ready to pick separate quite easily from the vines, and when fully ripe and mellow the vines generally crack near the stem to which the melon is attached. At this stage there sometimes will be seen drops of juice adhering to the cracking stem.

Both muskmelons and watermelons should be stored a few days in a cool place to mellow up before cutting.

To Make a Fruit Picker

By C. E. Carmack

A SIXTEEN-year-old boy was sent out in a large orchard by his father last fall with a number of other fruit pickers. He climbed about the trees and stretched himself out over bending limps a half-day when he thought about a broomstick-wire and sack fruit picker. The boy went to the house, where he made the device. A laugh went up from his comrades when he returned to the orchard and told what he had made. He showed the practicability and labor-saving features of the device. All the other pickers had to have a picker device like the original.

Many persons either shake, thrash with a pole, or knock fruit off the trees with sticks. This method bruises and injures the fruit, causing it to rot.

When the winter apples and pears are picked much time and patience are lost and a great deal of energy wasted in picking the fruit growing high on the trees, or else the fruit is shaken from the trees and bruised unless a fruit-picker device is available. Most farmers, if asked why they do not use a picker device, would say they are too expensive.

What farmer does not have handles of discarded brooms galore about his place, also as much as two feet of No. 9 wire, and an extra sack of some kind that he could spare? Those are all the materials needed to construct a "jim-dandy" fruit-picker device.

The tools needed are a gimlet, a pair of wire pliers, a large needle, and some coarse thread. A person can make the device in a few minutes.

The wire, three feet in length, should be bent into the shape shown in the illustration, making sure to have the nose part close enough together to detach the fruit. A hole should be bored in the end of the broom handle—or pitchfork handle if it is desired that the handle be longer—and the two ends of the wire twisted together and inserted in the hole. The bag to be sewed around this wire rim can be made any size desired and cut out of any kind of material, but a meal sack is the best, and the size should not be too large, as it will become heavy and unwieldly.

When completed, the gatherer is lifted under the fruit and pulled toward the operator. The fruit slips back into the narrow neck until the end is reached and then must fall into the bag hanging beneath to catch it.

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Natural Gray Wool, **winter weight**	per garment	$1.50
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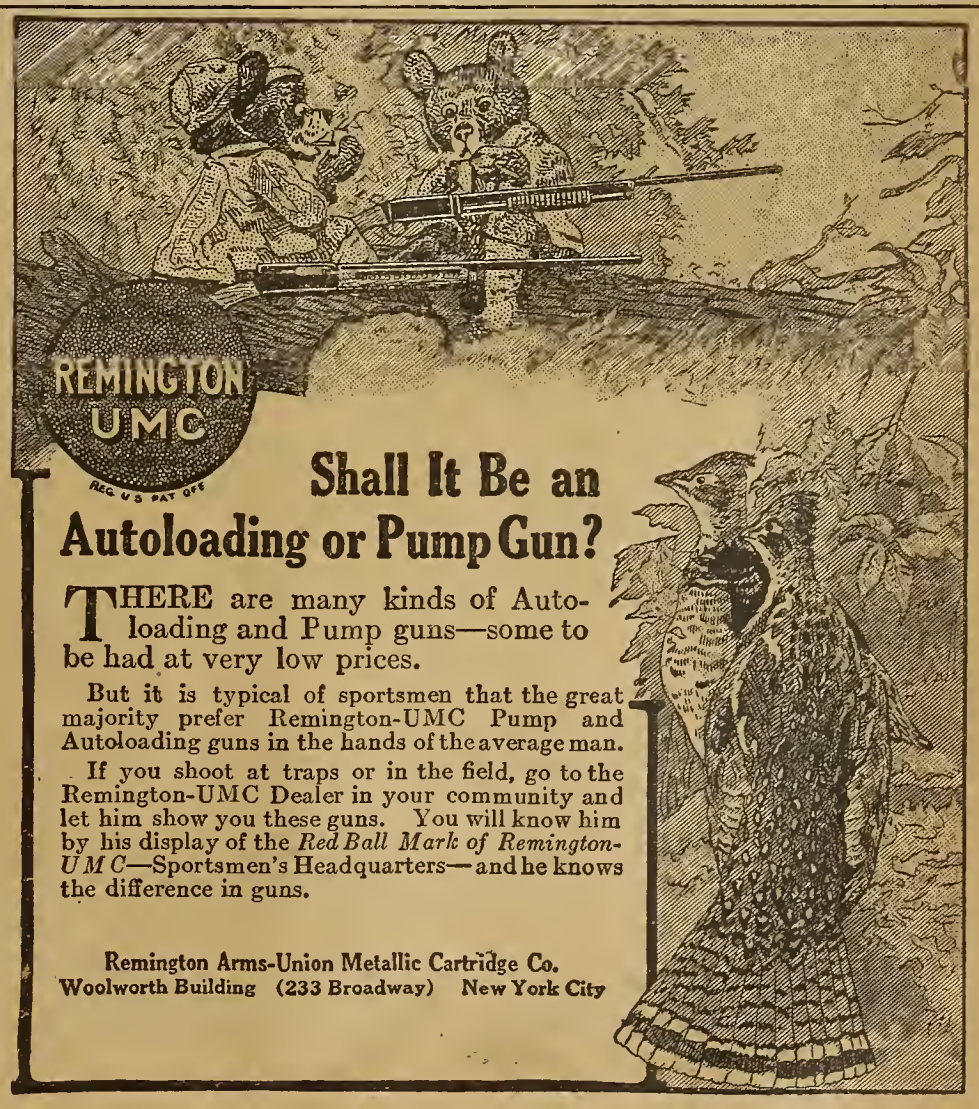

Shall It Be an Autoloading or Pump Gun?

THERE are many kinds of Autoloading and Pump guns—some to be had at very low prices.

But it is typical of sportsmen that the great majority prefer Remington-UMC Pump and Autoloading guns in the hands of the average man.

If you shoot at traps or in the field, go to the Remington-UMC Dealer in your community and let him show you these guns. You will know him by his display of the *Red Ball Mark of Remington-UMC*—Sportsmen's Headquarters—and he knows the difference in guns.

Remington Arms-Union Metallic Cartridge Co.
Woolworth Building (233 Broadway) New York City

IT SLUGS HARD

Coffee a Sure and Powerful Bruiser.

"Let your coffee slave be denied his cup at its appointed time! Headache—sick stomach—fatigue. I know it all in myself, and have seen it in others. Strange that thinking, reasoning beings will persist in its use," says a Topeka man.

He says further that he did not begin drinking coffee until he was twenty years old, and that slowly it began to poison him, and affect his hearing through his nervous system.

"Finally, I quit coffee and the conditions slowly disappeared, but one cold morning the smell of my wife's coffee was too much for me and I took a cup. Soon I was drinking my regular allowance, tearing down brain and nerves by the daily dose of the nefarious beverage.

"Later, I found my breath coming hard, had frequent fits of nausea, and then I was taken down with bilious fever.

"Common sense came to me and I quit coffee for good and went back to Postum. I at once began to gain and have had no returns of my bilious symptoms, headache, dizziness, or vertigo.

"I now have health, bright thoughts, and added weight, where before there was invalidism and the blues.

"My brother quit coffee because of its effect on his health and now uses Postum. He could not stand the nervous strain while using coffee, but keeps well on Postum." Name given by Postum Co., Battle Creek, Mich.

Postum comes in two forms:

Postum Cereal—the original form—must be well boiled. 15c and 25c packages.

Instant Postum—a soluble powder—dissolves quickly in a cup of hot water, and, with cream and sugar, makes a delicious beverage **instantly.** 30c and 50c tins.

Both kinds are equally delicious and cost about the same per cup.

"There's a Reason" for Postum.

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in each town to ride and show a new 1916 model **"RANGER"** bicycle. Write for our *liberal terms* on a sample to introduce.

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A toilet preparation of merit. Helps to eradicate dandruff. **For Restoring Color and Beauty to Gray or Faded Hair.** 50c. and $1.00 at Druggists.

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$2.25 and up PER SQUARE

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Write today for our Big Roofing Bargain Book. We will send it **FREE** with complete set of Samples covering everything in Roofing.

CHICAGO HOUSE WRECKING CO.
Dept. W 28 CHICAGO

Poultry-Raising

Goats and Geese Together

WHERE sprout land is still common in some cut-over sections, the Angora goat is gaining in favor as a sprout exterminator. It is contended by champions of the Angora that these goats will leave good grass and clover pasture uneaten until the sprouts are all consumed.

This suggests a combination of goat and geese farming. Goats and geese must be fenced in about equally tight to hold them.

Couldn't this white birch sprout land used by a Wisconsin family as a goose pasture have been double-worked with goats as well as geese to good advantage?

Eugene Herman tells here how his mother made use of sprout land in Wisconsin for geese with good returns:

When I visited my folks in Wisconsin last September I was surprised to see how easily my mother raised her geese.

Forest fires ran through that country some years ago, and young birch trees sprang up between the charred stumps. Some of the sprout land was fenced in for the geese, which have done exceedingly well in pasturing on the tender grass and clover, and bugs found among the brush.

Coming home from a cut-over breakfast

Only a very little grain is fed, but the geese and goslings keep fat, healthy, and sturdy running on this sprout land.

Goslings need a dry, warm place when small, but once well started and left to run in the manner described, returns are considerably better than from the same number of chickens.

There are innumerable farms containing ravines and brushy, rocky, waste land well adapted to geese or goats, or the two combined, which only requires a few fence posts and bales of woven wire to make them a good source of income.

High-Pressure Laying

THE 100-egg turkey hen is in about the same class with the 200-egg chicken hen. When turkeys are hatched by incubators or chicken hens, the non-sitting heavy-laying strains are an asset.

Clarence Erskine, Highland County, Ohio, has a Bourbon turkey hen that since beginning to lay last spring had laid 109 eggs up to August 11th without once becoming broody. This hen was still laying at the date when her laying record was furnished.

Neck-and-Neck Egg Race

THE present (fourth) egg-laying contest at Storrs, Connecticut, is furnishing the closest race for egg-laying honors of any contest yet held in this country.

At the end of the fortieth week the seven pens holding the highest record stood as follows:

White Leghorns (Connecticut)	1,577
White Leghorns (England)	1,577
Rhode Island Reds (Vermont)	1,573
White Wyandottes (England)	1,570
White Wyandottes (England)	1,566
White Leghorns (Connecticut)	1,557
White Leghorns (New York)	1,538

It will be observed there is a difference of only 39 eggs between the pen with the highest record and the pen standing seventh.

Last year there was a difference of 265 eggs between the highest pen and the seventh highest pen at the corresponding date.

The average egg production for the one thousand hens in this contest for the forty weeks was 119.8 eggs. At the corresponding time last year the average production per hen was 115.2 eggs.

MORE than half the nation's egg crop is produced in March, April, and May.

TEN good shots in Wilkes-Barre, Pennsylvania, went out with their guns and in a week shot 5,000 English sparrows. If the noise does not drive away the song birds forever, the plan may be a good one. Why not put Maxim silencers on the guns? Sparrows make excellent pie, and may well be killed for food.

A Precocious Pullet

ONE of the most rapid records in laying and reproduction of poultry kind comes from a New Haven County, Connecticut, poultry farm.

This record was made by a Rhode Island Red pullet hatched February 5th. She stole her nest, laid 13 eggs, and came off with her brood July 5th—just five months from the date she herself was hatched.

If we allow thirteen days for laying the eggs and twenty-one days for hatching, this pullet must have begun laying at considerably less than four months old.

Some of the same stock hatched February 5th, 7th, and 11th began laying June 19th, and at this writing are laying nearly 50 per cent production. These pullets were fed sour milk from the start, and had no water to drink until warm weather, when they were put on range.

Sifting Utility Breeders

By B. F. W. Thorpe

NOW is the time, when the pullets are growing up into little hens, to mark the ones that are developing most rapidly and showing signs of making early layers from which to select the future breeding stock.

Experiments show the early-developing pullets will make the best and most persistent layers. By banding a score or more of these quickest developing pullets and using the best of them for the breeding pens, a good start can be made towards a better laying flock. Better yet, if these pullets thus selected can be trap-nested until February or March, a still fuller knowledge of their egg-producing qualities can be learned. Also the type of eggs the pullets lay and by the daily handling given, the relative vigor, habits of industry, and activity will become more evident.

Pullets or hens that noticeably lose flesh and weight when laying heavily when properly fed have some constitutional lack in vigor and are unsafe as a means of perpetuating the best stock.

When selecting pullets for the breeding pen, select at least double the number needed, and mark them to designate first, second, and third choice. As they develop to full maturity, some that seemed inferior will appear as good or even better than the most promising at an earlier stage in their development, but the preference for breeders should be given to the ones making earliest development, other things being equal.

The same rule for the selection of cockerels holds true as for the selection of pullets, in regard to early development and vigor. In addition, the cockerels should be the sons of hens that are known to be heavy, persistent layers. If possible, the heavy-laying inheritance should be confirmed by similar excessive egg-production quality in preceding generations from which the cock bird has descended. Above all, aim for abundant vigor in all breeding stock.

Your Questions

To Save the Books

Query: How can I keep silver moths and worms from eating up books?

WILLARD BURROUGHS, New Jersey.

Answer: Here are two recipes which have proved successful in combating moths in both books and clothing: Flour of hops, 1 drachm; Scotch snuff, 2 ounces; gum camphor, 1 ounce; black pepper, 1 ounce; red cedar sawdust, 4 ounces. Mix the ingredients well, and strew among books, papers, or clothes to be protected.

The second recipe is as follows: Alcohol, ½ pint; spirits of turpentine, ½ pint; gum camphor, 2 ounces. Mix these ingredients well and dip in the mixture crumpled pieces of blotting paper, and lay them among the papers or clothing.

Sausage and Pudding

Query: I should appreciate some general directions to be followed in making sausage and pudding.

BESSIE S. CLARK, Virginia.

Answer: The economy of sausage-making is best served by using the trimmings from the shoulders, hams, and other portions of the pork, and parts of the head. All sausage should be free from blood and bone. Fat and lean should be ground together so as to be evenly mixed. Where large amounts of sausage are made the large cuts least desirable for smoking are also used. Every sausage maker finally develops his own recipe. Here is a good one:

To every ten pounds of meat, which should be three-fourths lean and one-fourth fat, add one-quarter pound salt, one teaspoonful of pure leaf sage, rubbed fine, and one scant teaspoonful of pepper to each pound of meat. The correctness of the mixture may be tested by cooking a small portion and tasting it.

Sausage may be kept in muslin bags. The best size is from 1½ to 2 inches in diameter. Push the sausage in solid with a wooden plunger. When filled the bags are tied, greased over with lard, and hung in a cool place. The best receptable for the sausage is probably the cleaned entrails, forced full of the meat with a sausage-stuffing machine or a wooden plunger. Some care is required to avoid bursting the cases. For safety during spring and early summer, it is well to smoke the sausage after it is put in the bags or cases. Pursue the method followed in smoking hams and bacon. Sausage may be stored in crocks and kept for several months during cool weather. Another very good way is to make the sausage into "pats," cook through, pack in crocks or fruit jars, cover with hot lard, and store in a cool place.

The "pudding" referred to is made as follows: Cook until tender one hog's head, hide, tongue, and heart, then add one half of a liver to each hog and cook until the liver is done. When cool take out bones, grind, add salt and pepper to taste, and fry out, and immediately pack in crocks. This will keep for several weeks in a cool place. This pudding is a favorite in the Eastern Atlantic States.

Feeding Sugar Beets

Query: (1) My valuable Buff Rock hen was injured and the muscles of one leg are contracted above the knee. She stands up when on the nest. She lays a deformed egg. Can anything be done for her?

(2) What is the feed value of sugar beets as a winter feed for hens? I think of planting some in my garden after the early crops are harvested. FRANK B., Ohio.

Answer: (1) We do not think that anything can be done for the hen.

(2) The sugar beet is valuable as a succulent food for poultry. Its feeding value is about double that of the turnip. In flesh and muscle building content it is more than double. It is about equal to green cowpeas in nutriment. It is of course not to be compared with grains. In 100 pounds of wheat there are 8.8 pounds crude protein, 67.5 pounds carbohydrates, and 1.7 pounds of fat. In 100 pounds of sugar beets there are 1.3 crude protein, 9.8 carbohydrates, and .1 of fat. The sugar beets in winter will take the place of the green stuff eaten by poultry in summer, and thus have more to do with the health and production of the birds than one would expect from the food elements contained in them.

E

Piping Spring Water

Why Two Boys are Glad They Caught No Fish

By E. C. SHAVER

THE summer home of the Elmore family, which was five miles from a town, was kept furnished complete except provisions, and was ready to be occupied at any time.

The site of the summer home had been selected because a large spring flowed out of the hill at the rear of the site. The spring water was cold and clear, and pure and healthful. The spring was curbed with a section of a large hollow tree. The tree, which had been hewn out carefully, had been sunk to a depth of four feet. The spring water flowed out of a notch cut in one side of the hollow tree curb. Thence the water ran down the side of the hill in a crooked rivulet across the road and into the valley beyond.

Because of the spring, Mr. Elmore had never thought it necessary to make any other provision for water to be used about the house and gardens. Even the horses and cows were led to the spring and watered from a trough. Water was dipped up with a bucket and poured into the trough.

Had to Carry Water

It was the duty of Charles and Edgar, the young sons of Mr. Elmore, to keep this trough well filled with water, and to keep a bountiful supply of spring water in the kitchen for household use.

One bright July morning the boys started early for the old fishing hole far up the valley, expecting to make a good catch long before it was necessary for them to return. The path led around the end of the reservoir which supplied the water for the town near the Elmore summer home. Mr. Freeman, the superintendent of the water works, was making his morning round of inspection, and had stopped to examine the gates of the aqueducts through which the water was conveyed to the town. He was a jovial sort of a man, just the kind that every boy likes. He was also very fond of boys, so when Charles and Edgar came near he greeted them with a cordial "good morning." They had often wished for an opportunity to see inside the little stone house that stood just inside the iron fence that surrounded the reservoir, and now that the gate was wide open they entered without waiting for an invitation, knowing that they were welcome.

Down in the pits, below the platform on which they stood, were the water gates at the entrance of the great pipe line. Mr. Freeman explained that these gates were used to regulate the pressure of the water and also to shut it off in case of a broken pipe at any place along the line. He also told them how the water was carried down to the town, first through the large pipe and then out through the smaller ones until it reached every home.

It was almost noon before Charles and Edgar reached the old fishing hole. Lunch was eaten on the large oak log on the bank. Then, creeping out on the trunk of a tree that overhung the water, they began fishing. But their minds were so filled with what Mr. Freeman had told them that it was impossible to keep from talking. A new thought had come to them. Why could not the water in their spring be piped down to the house just like the water in the reservoir was piped down to the town? "I believe it can be done," said Charles, the older of the two boys. "And I, too," said Edgar. They had never heard of such a thing before, it seemed such a simple matter. Was not the spring always full? And did it not always keep running down the side of the hill and across the road, even though the fields were dry and parched?

Finding that the fish would not bite, the boys returned to the big log on the bank and there worked out their plans for the new water system. On the paper in which their lunch was wrapped they drew a circle for the spring, and from it lines to represent the different places where it would be convenient to have water. Two things were wisely kept in mind: Where was water needed most? and where would it be most convenient? The sun was well down toward the west before the plans were completed. Then the paper was carefully folded so that none of the marks would be erased in carrying it home. The journey homeward was made with rapid strides.

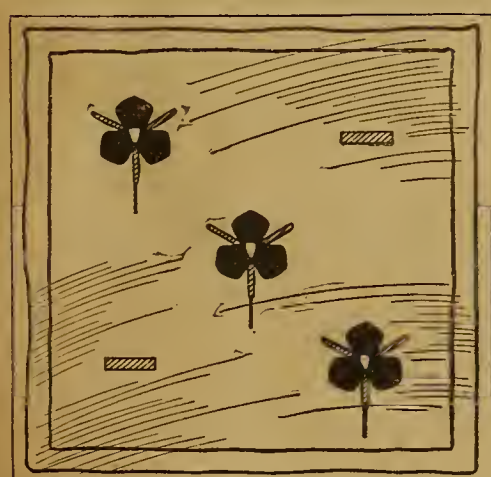
When Mr. Elmore returned from town he found the boys far down the road to meet him. Before they had had time to reach home the boys had told him all. And he favored the plans.

Their Successful Day

In three weeks the water system was completed. In the kitchen was a faucet just like the one in their town house. The trough at the spring had been moved down to the barnyard where it was much more convenient. In it had been placed a water valve governed with a float that permitted the water to flow into the trough until it was full. Then the valve would close automatically. In the pig pens another trough, with the same kind of self-regulating valve, was installed. In the center of the garden was a hydrant suitable for attaching a hose. A fountain played in the front yard, and the water from it fell into a large cement basin. Swimming about in the basin were a number of beautiful goldfish.

Down by the roadside was a large cement trough where the teamsters passing along could water their horses. The boys were delighted especially with the little house that adjoined the kitchen in the rear, for in it they had scored their greatest triumph. Here a small water motor had been installed which turned the washing machine, churn, grindstone, and the mill for grinding chicken feed.

Charles and Edgar look back with many happy memories to the day when they caught no fish but discovered the ideas for their new water system, and call it their most successful day.



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For Your Little Girl

By "BIG SISTER"

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She would want to do them herself if she had the time to spare from her busy housekeeping duties.

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When writing, address your letter to the Fancy Work Editor, FARM AND FIRESIDE, Springfield, Ohio.

EW

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You discover that it is filled with natural curled hair.

You observe that the tufting is full and deep and luxurious.

You pass on to the measurements, and discover that both the front seats and the tonneau are generously wide and give you leg room in plenty.

By this time it is clear to you why a production of more than 20,000 cars—as large in six months as is usually attained in as many years—has not been sufficient to supply the demand.

You appreciate why thousands have waited—because it is the quality revealed in the performance of the car which makes the price impressive.

We have never made any extravagant claims for the car.

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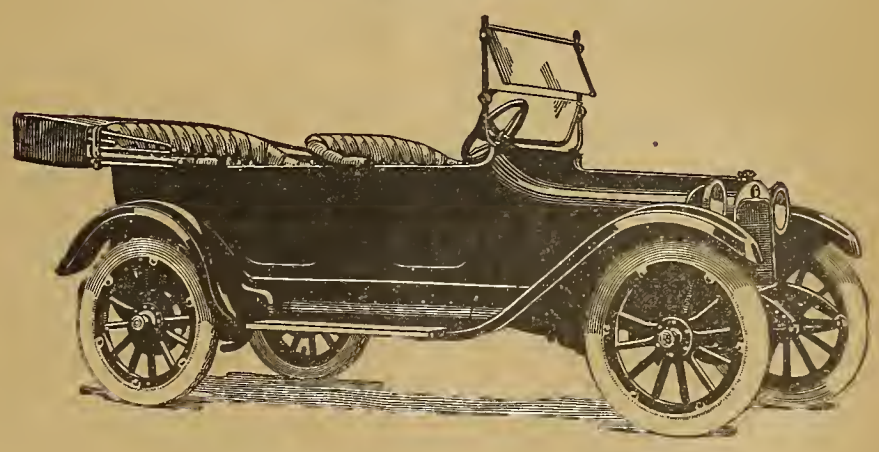

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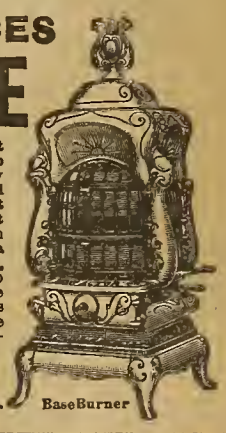

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Most every woman has originated some device to make the housework easier. Write and tell us about your conveniences. Aside from making a little pin-money, you will be helping others; and that is what the Housewife's Club is for. We will give $2 each month for the best description and rough sketch of a home-made household labor-saving device, and $1 for the next best or any that can be used. We will also give 25 cents each for good kitchen hints and suggestions. Also 25 cents each for tested recipes that we can use. Letters containing these facts should be written in ink, on one side of the paper only, and each item must contain not more than 250 words. We suggest that contributors retain copies of their contributions, as none can be returned. Address, Housewife's Club, *Farm and Fireside*, Springfield, Ohio.

RED Cabbage, Dutch Style—Chop red cabbage quite fine, and let stand in slightly salted cold water for an hour. Drain, cover with boiling salted water, let boil fifteen minutes, and drain. Put into a saucepan a large spoonful of butter, a teaspoonful of salt, half a teaspoonful of paprika, a tablespoonful each of chopped celery and chopped parsley, a large onion chopped very fine and a cupful of chopped apple. Put in the cabbage, mix all together, and place where it will barely simmer for two hours and a half, adding a very little boiling water if it shows signs of burning. A few minutes before serving stir in a tablespoonful of sugar, one of butter and one of vinegar. J. O. W., Ohio.

Creamed Cabbage—Put through a meat chopper as much cabbage as you want to cook, and boil it in salted water till tender. Drain, and to a quart of cabbage add half a cupful of cream, a tablespoonful of butter, salt and pepper; set the pan on the back of the stove, and toss and stir the cabbage till the cream is absorbed. O. R., Indiana.

Tin Can Used as Knife—Take a medium-sized baking powder can, and with a small nail punch holes in the bottom. This makes an excellent chopper to use when frying potatoes. GRACE T. HENDERSON.

Canning Without Sugar—Peel and quarter apples, and cook in a double boiler until soft, adding no water or sugar. Pack cans full of hot apples, and seal. When wanted for table use or for pies after the other apples are gone, use them the same as fresh stewed apples. The windfalls can all be used in this way, as well as other apples which will not keep long.

Raspberries, blueberries, and huckleberries may be canned the same way by putting in three or four spoonfuls of sugar to each can; rhubarb and cranberries by simply packing, uncooked, in the cans, filling with cold water and sealing. NETTIE BELL SHEDD.

In preparing Carrots, always boil them like beets, without paring, and when done let cold water run over them for a moment, and the skins will slip off easily and without waste. Then they may be used in a variety of ways, served with a plain dressing of melted butter, salt and pepper, or with a cream sauce. They may be cut into dice and combined with an equal quantity of peas, seasoned highly with butter, pepper and salt, making a good and pretty dish. In England they are mashed with an equal bulk of boiled turnips, and well seasoned, and go excellently with roast beef, pot-roast or beef loaf. INA C. MEGGS, Iowa.

Carrots Béchamel is a very good dish. Parboil the carrots slightly, remove the skins, and cut into slices a quarter of an inch thick. Put into a saucepan with a good slice of red pepper and chicken stock to cover. This stock may be made from the bones or giblets of a chicken. Simmer till tender, remove the pepper, and thicken the carrots with butter and flour creamed together; add a teaspoonful of sugar, salt and pepper and half a cupful of cream to a good dish of carrots. Serve very hot. J. O. W., Ohio.

Italian Beets are boiled, peeled, cut into quarters and kept hot while a sauce is made of two tablespoonfuls each of butter and flour, mixed over the fire, a cupful of water added with salt and pepper, and stirred till smooth and thick; add a tablespoonful of lemon juice, two tablespoonfuls of butter, beat well, pour over the beets, and serve.

Beets may be hollowed out into cups and filled with peas to be served hot, or let the cups chill, fill with chopped cabbage and celery, combined with any preferred dressing, set the beet cups on lettuce leaves, and serve at once. O.

Creamed Oysters—Pick over one pint of oysters drained of their liquor. Put into a saucepan, and cook until they are plump and the edges curl. Remove oysters and add enough milk or cream to the liquor to make two-thirds cupful. Make a sauce, using one-half tablespoonful of butter, one-half tablespoonful of flour, and the liquid. Add oysters, season with salt and pepper and a few drops of lemon juice, one-half teaspoonful of chopped parsley, and the yolk of one egg. Serve hot on toast. M. R., Ohio.

Baked Hominy—Take one can of hominy, rinse and drain. To this add two tablespoonfuls of melted butter, two eggs slightly beaten, two cupfuls of milk, one teaspoonful of sugar, one teaspoonful of salt, one-eighth teaspoonful of pepper. Bake in a slow oven thirty minutes. J. M. B., Wisconsin.

Soup Stock—When I have boiled beef for dinner, I always make soup of the water the second day; so when putting the beef on I add all the pieces of roast and steak that I have on hand and let them boil with the beef. I imagine they add a flavor, and an hour's cooking next day will convert the whole into most excellent soup stock, while gasoline and time are both saved thereby. MRS. H. G., Washington.

Sunday Reading

The Loiterer

By Eugene C. Dolson

IN THIS still time of dreamful autumn days,
When maple leaves a reddening hue take on,
Dead summer's ghost yet haunts the woodland ways,
Though summertime be gone.

Comfort a Friend

By Edgar L. Vincent

JUST a little story of the war. A number of men of different nationalities were shut up in a narrow prison, awaiting, they knew not what, save that four of the company had been condemned to be shot. And all seemed to be trying to make life as bearable as they could for one another. The man who writes the story says that one of the prisoners, a poor chap battered and altogether the worse for wear, seemed particularly big of soul. Far on in the night when the writer was trying hard to get to sleep, he felt this war-worn little man creeping toward him through the dark. Feeling up under his blanket, he untied first one of the fellow prisoner's shoes and then the other.

"That will rest your feet a bit," he said. Then he pulled off his coat, rolled it up, and placed it under the head of his fellow and himself lay down pillowless and sore of body but big of heart.

Comforting a tired friend: why do we not think of that oftener? This old world of ours has many a hard place. Prisoners, all of us, at one time or another, shut up away from home and longing for deliverance. Who cares? Who loosens the latchet of our shoes and bares his back to make us a pillow? Who says a word by way of comfort when we are down and out? Who slips across the field when the clouds begin to gather and helps us get in the last load of hay or put the last bundle of wheat under roof, safe out of the storm?

But now why should we expect the neighbor to do this if we ourselves forget these kindly ministries? We do not think of it. How, then, can we wonder that others are unmindful of us? "But," do you say, "we are so busy looking after our own interests that we have no time to give to others. Doesn't the Good Book say the man who does not look after his wife and dear ones is an infidel and worse than an infidel?" So easy to say this; and yet if we only knew it, when we care for the friend over yonder we are doing the very best we can for those of our own household, for these things all come back with tenfold interest. The kindly deed we do to-day bears fruit after its kind on the morrow. Speak a good word, sing a cheery song, and very soon when we are tired we shall hear somebody crooning his song and whispering his words of encouragement in our own ears.

But this service must be whole-hearted and without thought of reward. Seeking favors through favors rendered is the surest way in the world to see the gold turn to brass, the diamond crumble to ashes. Unselfishness unlocks the door to life's purest joys. There is no other key.

E

Almost every housewife uses Gold Dust for washing dishes. She knows it is at once taken up by the water and forms the ideal cleansing solution—almost automatically dissolving and removing grease and leaving the dishes clean and bright.

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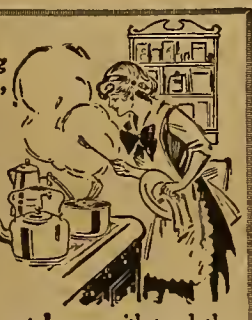

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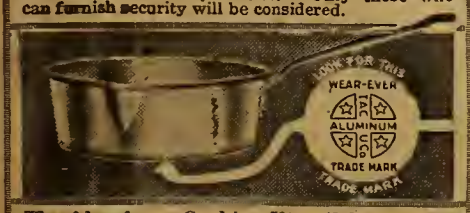

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EW

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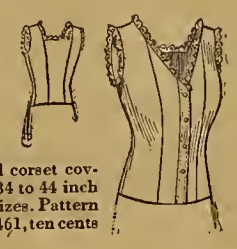

Fitted corset cover in 34 to 44 inch bust sizes. Pattern No. 1461, ten cents

A plain bishop dress for the baby. It is simple to make and to launder. Pattern No. 1925, price, ten cents

Your patterns, made expressly for you to your measurements, to give you the best possible effect when garment is finished. It is always cheaper to make things at home—with Woman's Home Companion patterns it is far more satisfactory. Send the coupon for yours to-day

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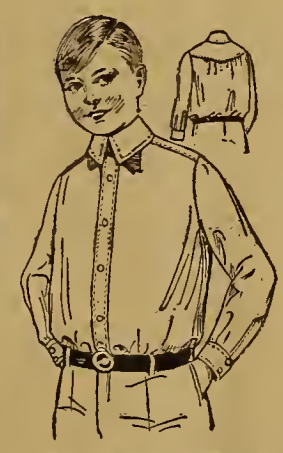
Baby accessory set of bib, bootees, and cap, made from pattern No. 1298. Cut in one size only. Price, ten cents

A simple school dress made from pattern No. 1883. Cut in 2 to 8 year sizes. Without elaborate trimming this dress still has good lines and is an excellent model for the home dressmaker. Pattern, ten cents

Girl's underwaist and drawers, cut in sizes from 2 to 8 years. Pattern No. 1685, ten cents

Man's nightshirt made from pattern No. 1801. Cut for 14½, 15½, 16½, 17½, and 18½ neck, corresponding to 36, 40, 44, 48, and 52 breast measures. The price of this pattern is ten cents



A good every-day blouse for the boy, made from pattern No. 1469. Cut in 6, 8, and 10 year sizes. The price of this pattern is ten cents

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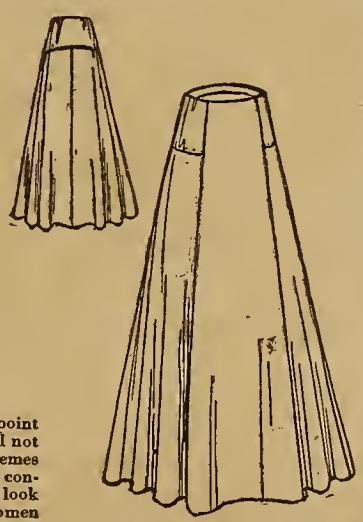

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The "Wonder Car"

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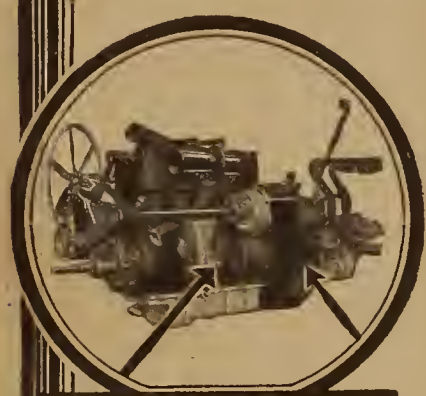

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Today, the 1916 models of every important make of automobile have been viewed by the most critical jury in the world—the American automobilists.

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The "wise ones" who have given the 1916 Maxwell the verdict, base their judgment of real automobile value upon these four vital points:

1st—The "first cost" of the car
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The 1916 Maxwell's new price, $655, fully equipped, with electric starter, electric lights, high-tension magneto, demountable rims, "one man" mohair top, and every other high-priced-car feature, has earned it first place as the car of record low "First Cost."

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FARM and FIRESIDE

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Vol. XXXVIII. No. 26 SATURDAY, SEPTEMBER 25, 1915 *Published Bi-Weekly*

To Increase Corn Yields

Good Seed Solves Big Problems for Willard Zeller

By O. A. HAMMAND

ONLY eight years ago Willard Zeller began the experiments in the growing of corn that have now put him in the front rank of seed-corn producers throughout the country. At his farm home in Greene County, Iowa, of his own initiative and without any support or encouragement except from his own family, and in spite of the jeers of his neighbors, he began a series of experiments that have led to most marvelous and very profitable results.

Very early he came to understand that the one biggest thing in the corn business was good seed, and systematically began to develop it. A germination test was made of a large number of ears, and from among them 10 ears, all of which tested 100 per cent perfect and strong, were selected. Three hundred kernels from each of these 10 ears were planted, and the corn from each ear was planted in a separate row. The results were amazing. This seed corn had all tested alike and all appeared equally good, but when it was planted and cultivated under the same conditions, it was found to be far from equal. All grades of quality were represented, the best ear yielding 118 bushels to the acre and the poorest yielding only 37 bushels. This was a revelation to the Zeller family, and even this small amount of accurate information awakened their interest.

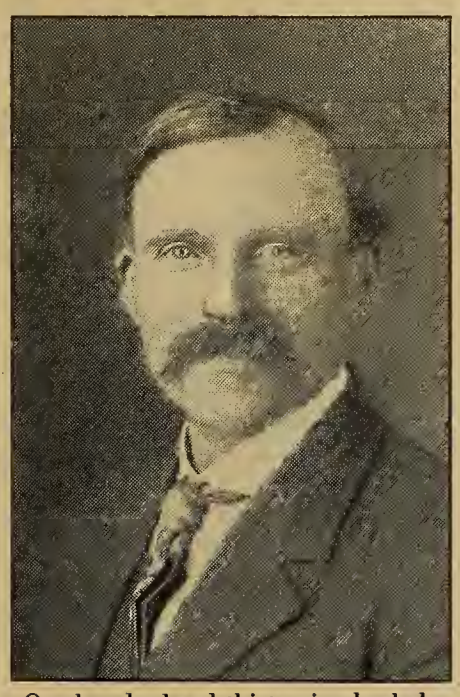
Tests Show the Poor Ears

BUT they were not satisfied with one test. They were anxious to verify their experiments, and planted corn from the same mother ears under similar conditions the next year. The results were also similar. The ear which was best the first year was best this year also, and produced a yield of 117 bushels, and the poorest ear was again poorest with a yield of 35 bushels. At this stage they were satisfied that with results so nearly uniform there could be no accident about their investigations. It had been demonstrated that germination proved simply that the corn would grow, but was no sufficient test of the quality or yielding properties.

The third year, under similar conditions, there was the same great difference in quality among these ten original ears from which the test was being made, the first was again first with 114 bushels, and the poorest was again poorest with 34 bushels. It therefore appeared that there was very little variation in the yielding qualities of the corn during this period of three years, and in the case of the best ear and the poorest, of which exact information was kept, there was a variation of only a few bushels, and nearly the same in the case of each ear.

At this stage the experiments with the original mother ears were abandoned, and 28 ears raised during the second and third years were tried out by the ear-to-the-row method. This time there were two high-yielding ears, one of them producing 114 bushels and the other 106 bushels. Having developed several high-yielding ears, he crossed the two highest. The offspring of the ear producing 118 bushels raised the first year and the one producing 114 bushels raised the third year were then shelled together and five acres were planted with this corn. On a measured acre the result was a yield of 141.6 bushels. The theory of Mr. Zeller's method, reduced to a few words, is to make a long and careful series of experiments to work out the highest yielding ears and then repeat the process, always crossing the strongest with the strongest. The corn from each ear is planted in a separate row and the famous ear-to-the-row method has no special advantage except that it permits exact information as to the results.

This process is bringing results not alone in the amount of the corn raised, but the increase in the amount is largely because of the better quality. The size of the ears has improved so that instead of 100, which is the usual number, it takes only 80 of these to make a bushel. They breed back to type and distinctly resemble the mother ear. What is now well known as Zeller's Strain of Reid's Yellow Dent Corn is lemon in color, the ears are from 8½ to 10½ inches in length, 6½ to 8 inches in circumference, and have from 18 to 20 rows, with very little space between the rows. The cob is almost covered with corn, there is a very small shank, and the ears run uniform in size and shape. It shells from 88 to 91 per cent corn; the kernels are moderately dented and have a good depth of kernel with a red cob of medium size. Standing in the field the stalks are 9 or 10 feet high, and though they have an abundance of foliage the corn is easy to pick.



One hundred and thirty-nine bushels of corn to the acre have been raised by Willard Zeller on his Iowa farm

In order that the tests may be conducted under uniform and the best possible conditions, every detail in the selection of the soil and the cultivation of the crop is given attention. A definite system of crop rotation is used. One crop of corn is raised, then follows one of oats and two of clover. The clover is cut in the usual way for hay, but the second year the second crop is plowed under in September or October for fertilizer. No commercial fertilizer is or ever has been used by the Zellers, they relying entirely on the rotation of crops, the use of manure accumulating on the farm, and their own methods of cultivation.

The soil is plowed to a depth of seven inches in the fall. Early in the spring it is harrowed to make a dust mulch. By the harrowing it seems that the small capillary-like openings in the ground are broken and the moisture that would otherwise escape remains in the soil. Just before planting, the ground is disked and then harrowed again. With the soil soft and fine and warm it is in condition for planting. No fixed date is followed, but the planting is usually done in the early part of May.

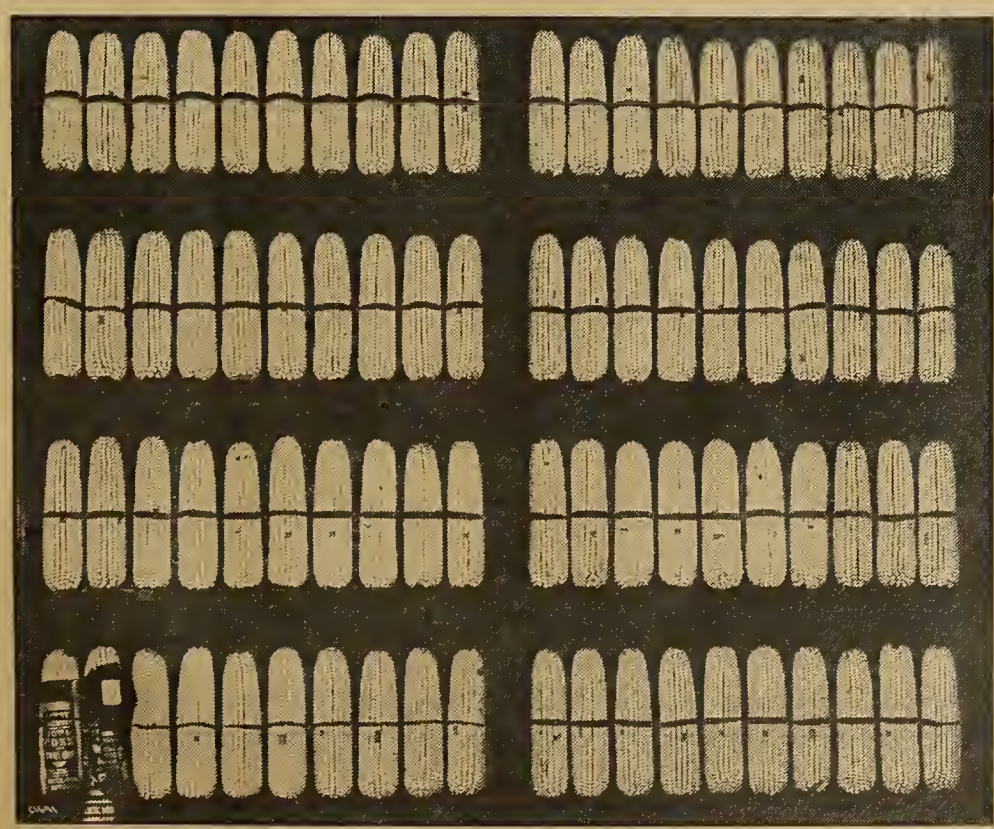
It is important that the seed shall be properly planted. The kernels at the tip and butt of the ear, even though as strong as the others, are not uniform in size or shape, and therefore will not plant even and are not used. Four kernels are put in a hill and planted 3 feet and 6 inches apart each way. When the corn is two inches high cultivation is begun, and great care is used so there will be surface cultivation. To do this the knife cultivators instead of the shovel cultivators are used.

The first plowing must not throw the soil up around the corn, but simply make a level cultivation. The second time the corn is gone over, the plows should not go deep enough to tear up the roots, as it is easy to cut off the source of growth and kill the crop.

About the first of July the corn is waist-high and ready to lay by. It now matures ten days earlier, and is easily harvested before the frost comes. The corn to be used for seed is carefully selected, put on racks in the seed house, which is well ventilated, and there dried by a very moderate artificial heat. After being dry, freezing does not hurt the seed. This seed remains good for several years, and Mr. Zeller always protects himself against any loss of seed by keeping some of the choicest from one year's crop until the next crop is harvested. He also has the original mother ears with which he began his experiments.

In the general field, with about the usual amount of work, 75 to 80 bushels are raised to the acre, and for the breeding plots we have exact information. In the year 1912 Mr. Zeller grew 141 bushels at a total cost for rent, seed, horses, labor, and husking of only $13.73, and sold the entire crop for $97.15, making a profit of $83.42 on the acre. In 1913 he grew 123 bushels on his acre, but it was a better quality, and at an expense of only $11.02 he made a net profit of $159.58. In 1914 he raised 139 bushels on an acre at a cost of $12.15, and made a profit of $197.80. During the last three years he has grown 403 bushels, which is an average of 134⅓ bushels to the acre, at a total cost of $36.04, or 9 cents to the bushel, and has made a net profit of $440.80 on the three crops, all on a single acre of land.

For several years Mr. Zeller has taken most of the big prizes in the corn shows wherever he has entered. In the National Corn Show at Dallas, Texas, in 1914, he received first in the contest for "one best ear of any variety," and first for the "ten best ears of any variety," and first for the "ten best ears of Yellow Dent Corn." In the Iowa corn shows he received the largest yield per acre in 1912, had the Grand Champion Bushel in 1913 and again in 1914, being the only man who ever took this prize two years in succession. The display of corn, in the form of an immense cornucopia, in the Iowa Building at the Panama-Pacific Exposition at San Francisco was made entirely of Mr. Zeller's corn. At this exposition he was also awarded the gold medal for the best bushel of corn, and the title of "Champion Corn Grower of the World."



Bred and raised by Mr. Zeller, this bushel of corn was awarded the prize of Grand Champion Bushel at the 1914 Iowa Corn Show. This same prize was won by Mr. Zeller in 1913. He began his experiments only eight years ago

Some Corn Gospel

By JOHN COLEMAN

IF YOU plant corn after corn continuously for twenty years, it will be bad for the land—one test field in Ohio grew 26 bushels for the first five years, and for the last five years only 8½ bushels.

This had no manure. But even where five tons of manure per acre a year was used, corn after corn for twenty years knocked down the yield, in spite of the manure, from 43 bushels to the acre to 37 bushels.

In fact, a five-year rotation with no manure gave about as good results as five tons of manure to the acre and continuous cropping. The five-year rotation with no manure lowered the yield from 32 to 29 bushels.

This striking object lesson is a convincing argument for the practice of a rotation instead of continuous cropping; and it shows how larger returns are received with manure used in a rotation.

Sixteen tons of manure in twenty years with a five-year rotation increased the corn yield from 41 bushels to the acre to 52 bushels, while 25 tons of manure in the twenty years of corn after corn lowered the yield about six bushels. Manure pays best in rotation.

With 250 pounds of commercial fertilizer per corn crop the corn-after-corn system lowered the yield in twenty years from 39 to 33 bushels, while 320 pounds per corn crop in a five-year rotation increased the yield from 36 to 46 bushels.

Not many farmers can carry out this sort of test, but it is mightily instructive to all of us. It proves what we all believe, if we pay any attention to our business. A good deal depends on the soil of course, but the tendency is the same on any soil. These twenty-year tests were made at the Ohio Experiment Station.

The Editor's Letter

At Coolfont Farm, September 15, 1915

I AM NOT going to mention the name of a young friend living in Madison County, Illinois, because I am not sure he would like to have me do so; but his letter is so significant that I must give it and its problem to those who read this column. He has been a constant reader of FARM AND FIRESIDE for six years. "You have certainly influenced me to take up farming," says he; and I am not sorry, for he has been pretty successful.

"Having started a few years ago with a horse, a one-horse plow and a cultivator, I now have eight horses, three colts, about fifty hogs, sixteen head of pure-bred Shropshires, and a fine flock of White Leghorns. I am farming 220 acres. I have been buying a few good implements every year, among the best of which are a two-row cultivator, two fourteen-inch sulky plows, a twelve-inch gang plow, a hay tedder, a six-foot mower, aud a spring-tooth harrow for the alfalfa.

Can See His Way Out of Debt

"I AM a little in debt, but I can see my way out. I have been 'baching it' all these years. No, I am not a woman hater—far from it; but I could never thiuk of briuging a girl to the farm to share the hardships with which I have put up, with such bad help and the poor excuses for furniture I possess."

I'm not going to say a word about that part of his letter, but I do hope some of our girl readers will feel like giving us their views on this young man's attitude toward these hardships for the not-impossible she.

This young man, twenty-five years old, thinks of selling off his farm equipment, believing he could realize $2,000 after his debts are paid. But does he plan to leave farming and farm life forever? I am glad to say he does not. He is considering going to the University of Illinois for a four or five year course in agriculture with the expectation of becoming a county adviser or a teacher.

"I have been reading the Uuited States Department of Agriculture bulletins, state bulletins, and books got by parcel post from a city library. I am positively hungry for agricultural literature. I have quite a collection of books of my own, including a few precious volumes of Darwin, Spencer, Emerson, and Irving. I love good literature.

"Do you think, Mr. Quick, that I had better stay on the farm, or would you advise me to sell out and go to school? If I stay here I can never hope to get as much time to read as I should like to have. I have to be in the fields long hours in summer, and in winter it's shuck corn, do chores, and cook. I aspire to a county adviser's job, or perhaps that of a teacher. Yes, I shall have to study spelling, punctuation, grammar, and other branches supposed to come before college, but I love to study.

"Would I make a better teacher than those boys who never plowed a furrow? I know boys taking agriculture who never did a week's work on a farm in their lives. I can set up any plow or cultivator, or run successfully any machine used about here on a farm.

"I read your story, 'The Browu Mouse,' and was surprised to find that my life parallels that of Jim Irwin in the matter of work and study.

"On account of the articles of Mr. John P. Ross in FARM AND FIRESIDE, I have owned a small flock of Shropshires for two years. Averaged twelve pounds of wool this spring."

Now here's a young man worth paying some attention to. I like to think that there are thousands of young men and young women of the same sort reading this paper, and to whom we can talk twenty-six times a year—young men and boys who read good literature as they can catch the time for it while making good with the plow or the manure spreader; young women and girls who, while washing the dishes, feeding the fowls, or churning, think of what they have read.

A Reading Country Progresses

I HAVEN'T much hope of a country which is not filled with people who read. When I say read, I mean real reading. Everybody reads a little from a seuse of duty—the daily paper, the farm paper, and occasionally a story or a book devoted to some special topic in which the reader is interested. But that is not real reading, because it is not done for the love of reading.

The real reader reads because reading puts him iu intimate relations with the greatest minds of all the ages. Take only the few books mentioned by our young friend in Illinois—and he has only a few of the great ones. His volume of Darwin gives him the best of the mind of the greatest student of physical life who ever lived—a man so profound, so candid, so honest that reading his writings must make anyone a better man. Spencer is thought by many to be the greatest philosopher of all time. Emerson is one of those men who wrote out of real inspiration—a prophet, a living fire of the soul. Irving is one who finds in life things to make us wonder why we could have passed them by, a genial, happy, clever interpreter of humanity, the American Charles Lamb. And there are dozens of such men and women who ask us from the shelves of every bookstore to step in and become acquainted. What a privilege! And such an acquaintance! We may know Plutarch better than his wife knew him. We may get more out of Tennyson than was probably known by that dear friend of his for whom he wrote "In Memoriam." Writers put their whole souls into their books, and give only a part of themselves to their friends.

We shall cease to be a great people just in proportion to our general failure to make friends with the great minds of the past and the great minds of the present.

But I haven't answered that young man's question. Had he better stay on the farm, where he is winning so considerable a success? And he has only just begun to succeed on the farm. This start in farming equipment is the hardest part of the journey. The next ten thousand dollars will come easier than this first two thousand, unless fortune turns adverse.

I think that he may confidently expect to possess a farm of his own in a few years, and to be out of debt and well-to-do as a farmer while still in middle life. He possesses two qualities, one or the other of which most of us lack—ability to work and ability to think.

He will succeed on the farm, I have no doubt; but, yet, I hope he will sell out—at good prices—and go to school. Such work as he aspires to do is the most productive farm work in the world, and the demand in it for men of the true farmer type is enormous. The county agent, if he is successful, must be of the true farmer type—inwardly, if not outwardly. The successful rural teacher of the future must be of the true farmer type of mind.

The demand for county agents of the right sort is far greater than the supply, but it will be much sooner satisfied than the need for rural teachers of the Jim Irwin type. For they must be people of better education than Jim Irwin had. They ought to possess a combination of the training of a practical farmer, of an agricultural-college graduate, and a normal-school graduate. Some day we shall have training schools for rural teachers which will give them just what they ought to have.

Should Take Normal Course

I THEREFORE advise this young man to go to the agricultural college and take, not four or five, but two or three years of agriculture, a carefully selected course for the purpose of securing a groundwork, and which, added to the successful farm experience, should qualify him for the position of county agent. He ought to do much more than the required work with all that vim and pep of his. Then I think he should take enough normal-school training, with special reference to rural work, to fill up the four or five years of study which he has laid out for himself. Then I hope he will go into the school work rather than the county-agent work. It is a greater field. One of these days the county-agent work will undergo a gradual change from its present status. A large part of the work now done by county agents will be performed by just such rural teachers as this young man will become, as heads of large consolidated rural schools, which they will superinteud and teach year after year, at good salaries.

Go to school, young man! In your case school work will be more truly productive than farm work.

Herbert Quick

Pure-Bred Hogs Pay

How a Poor Boy Becomes Wealthy

By W. N. CLARK

SHORT and with a close-knit, sturdy figure aud clear blue eyes the man strikes you as a hustler, a worker, a person who does a day's work every day. He typifies his race, the Danes, quiet, unassuming, saving, but at the same time hard-working, efficient, and orderly. His mind works in straight lines. When he decides on a plan of farming or breeding, he sees it through to the conclusion. If he finds a boar he thinks will fit well with the breeding lines he has in his herd, he buys him.

Goiug iuto the pure-bred hog business was one of the wisest moves he ever made. It took a lot of nerve to put the little capital he had into what was for him an experiment. But it was these same pure-bred hogs that made the farm an interesting place for his sons, and helped them through that period in their early teens, when farm work looks to many farm boys like one long continuous drudgery. It was a fortunate thing for the boys and for him that he did bring something into the farm operations that had an element of interest in it.

He is regular in his habits. He goes to town, pays his bills, transacts his business, and makes himself known to the men of the town every Saturday, rain or shine. His reputation for regularity has improved his credit facilities at the stores and the banks. But he does not need credit.

Mace Madson of Madison, Wisconsin, came to the United States as an immigrant. He was alone in the world, and with barely enough money to get by the immigration officials. Now he is one of the leading breeders of Poland China in the Middle West. The story of his youth shows what industry, thrift, and brains can do.

Coming to the United States in 1872, a young man unacquainted with the language or the customs of the country, Mace Madson went directly to Dane County, Wisconsin. He desired to make a home for himself. He obtained a job on a farm. For ten years he worked as a farm hand. During this time he lived as cheaply as he could and saved his money. Then he started out in a small way as a renter.

From the beginning of his farming operations as his own boss, he engaged in general farming. He always liked hogs, believed in the money-making possibilities in them if handled properly, and hence gave them especial attention and care. Mr. Madson's hog ventures proved profitable from the first.

Starts With Grade Hogs

ABOUT twenty years ago he started with a herd of grade Poland China hogs. The herd was bred purer all the time grade hogs were reared on the Madson farm. Since 1905 Mr. Madson has reared only pure-bred hogs. The year 1900 marked another important event in the life of Mr. Madson. He bought the farm on which he now lives. The farm consists of 110 acres of as good land as there is in the county. All of the land is in cultivation.

Two grown sons live with Mr. Madson. It is to the teamwork and hearty and helpful co-operation of these sous that he owes no small part of his success.

They made their first showing of Poland Chinas at the Wisconsin State Fair five years ago, and have shown every year since that time. They have won enough prizes to place them among the foremost Poland China breeders of the State. One particular interest is the remarkable record of winning, every year they have shown, the Wisconsin Special for the three best sows over one year, owned and bred by the exhibitor. A year ago they won all the first prizes for sows in the different classes over one year, and senior and grand championship on their aged sow. And the striking point to all of it is that every animal was bred by the Madsons. The herd was not a picked-up herd, selected for exhibition purposes, but animals out of their own herd, with full brothers and sisters at home that were nearly as good as the exhibited hogs. Last year the Madsons were just as successful. To indicate the extent of their winnings it is only necessary to state that the Wisconsin Fair management annually offers a cup to the swine exhibitor winning the greatest number of total points, the points being counted on a basis of 7 points for a first prize, 6 points for a second, 5 for a third, and so on; and that the Madson winnings totaled 49, while their nearest competitor had but 29.

At the Illinois State Fair at Springfield, which brings out strong competition in Poland Chinas, they not only came away last year with a highly creditable record, but managed to annex the prize for the Junior Champion boar, and while not showing a full herd, lacked but one point of winning the cup for the Premier Exhibitor, being beaten by a Nebraska breeder.

The Madson herd consists of from 20 to 25 brood sows. They are all of them of what is known as the "medium type." Mr. Madson insists that the really important characteristics of Poland Chinas are early maturity, easy feeding, and, above all, smoothness. It is his boast that you cannot find a wrinkle in the whole herd. He has no sympathy for the recent wave of fancy that has come over some Poland China breeders for a big rangy hog.

"We can't, and wouldn't if we could, compete with the bacon-type hog."

Use Inexpensive Hog Houses

THE thing that strikes one most noticeably when he visits the Madsou farm is the modest way they are doing all these things. They are not shouting about the wonderful things they have done. Nor do they have any extravagaut buildings, appliances, or the folderol one so often finds with farmers who style themselves as successful exhibitors.

The Madsons have the same kind of hog barn that many thousands of American farmers have. The Madson hogs are given the same kind of care other farmers give their hogs. The brood sows, during the winter, rustle at the side of a straw stack for their nests. The sows are given a little corn and a little slop feed.

A few days before they are due to farrow, the sows are placed in small pens by themselves. The corn ration is decreased and the slop ration increased slightly. For twenty-four hours after the sows farrow they are not fed. Plenty of fresh water is given to them. Such care and feed insures strong, vigorous pigs.

The herd boar occupies a small A-shaped house alone. He is given plenty of exercise, and is fed a ration that makes him energetic and active.

The Madson farm is run on a strictly practical basis. And they make the farm pay, and pay well. The hogs are a source of much of the farm's profit, and are not a hobby on which they spend money.

It has been demonstrated by the Madsons that the raising of pure-bred hogs is a profitable business when connected with industry, brains, and other farming operations on good land.

Mace Madson with one of his Poland China herd boars. Pure-bred hogs paid for this fertile Wisconsin farm

EW

The only kind of a small tractor that gets much serious consideration nowadays is a strictly one-man outfit. This tractor is plowing two 14-inch furrows, which in this soil would ordinarily require at least six good horses

Tractors Do the Drudgery

Medium-Sized Machines Meet Need of Average Farm

By D. S. BURCH

A HORSE is about as strong as five men, and an elephant as strong as eight horses. And while we admire American ingenuity which nowadays gives one man perfect control of many horsepower, let's not forget that for centuries the elephant has been an important draft animal in India. The elephant is really the nearest approach to a living one-man farm tractor.

So the idea of concentrating horsepower as is done by tractors is not so new after all. We've simply invented a docile mechanical elephant that can stand this climate. The ox, the mule, and the horse have been faithful laboring friends; but somehow I feel that we need a mechanical servant too.

Since attending one of the big tractor demonstrations, I have felt this still more keenly. And the man who gave me that confident feeling was, strangely, a grizzled old farmer who at first seemed a kill-joy to everything new. This man was conservative about new crops, new methods of tillage, and new modes of living. He hadn't gotten over the fact that automobiles used to scare his horses, and in two days I didn't see him smile once; but he had come to buy a tractor.

"We've always needed something better than horses," he said, "to do the heavy work, and these tractors look all right. They have the power, and they won't get scared at every little scrap of paper and run away." That's how he felt about tractors. When I left him he was trying to decide between two machines, both of them good ones.

Close to one hundred styles of gas tractors are now made by about thirty-five different firms. They range in price from $350 to about $3,000. Four sell for less than $500, about twenty sell for between $500 and $1,000, and the rest are higher priced.

"Let's See It Work," They Shouted

THIS year has taught both manufacturers and users some valuable lessons. It has shown, for instance, that the very small tractor is as impractical for plowing and other heavy farm use as too light a team of horses. Last May I visited a tractor factory that was making a specialty of two sizes—one a three-plow size and the other a two-plow. Both sizes were made in about equal numbers, and both seemed popular. Three months later this same manufacturer said that he was selling one hundred of the large size to one of the small size, and in some cases men who had ordered the small size by mail would telegraph to change the order to a large-size machine. Manufacturers are finding also that medium-sized tractors cost only a little more to make than the small ones.

Anyone who has attended any of this year's demonstrations, and has seen fifty or more tractors busily at work in one field, quickly concludes that they have advanced a great deal farther than books or government literature on the subject would indicate. Anything written more than six months ago is of small value to the man who is considering the purchase of a tractor. At that time the substance of advice was, "There are plenty of good tractors on the market, but be careful which one you buy." That is not very satisfying advice.

The only way to size up a tractor is to see it work up-hill and down, in stubble and hardpan, in dry ground and wet. A manufacturer who tries publicly to talk up his tractor at a field demonstration soon learns this. Every time he stops to breathe he gets such instructions from the crowd as, "Come on, go ahead and plow," and "Let's see it work."

In this connection the looks of a tractor are deceiving. Some that are freakish in appearance are easily handled and do excellent work. Others that you would think to be excellent machines just to look at them are rather disappointing in field work.

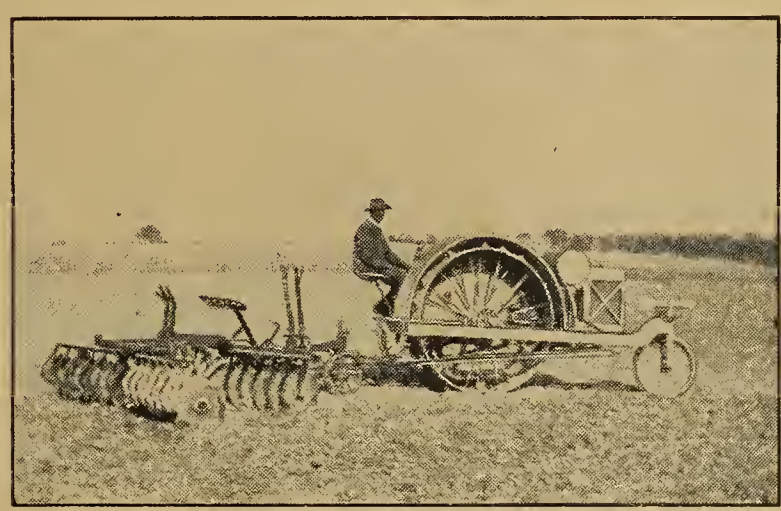
The difference between a big tractor and a small one is not simply a matter of size. "A small one is much harder to design," explained one inventor. "In plowing a large tractor will plow out its own width, but something has to be done to overcome side draft when you turn over a strip less than four feet wide. Nearly all the three-wheel models are attempts to get rid of side draft."

One way is to have the main driving wheel run in the furrow. Others distribute the weight of the tractor so it is mostly over the wheels nearest the furrow and the land wheel carries only a small proportion of the load.

"When you once get the right design," this inventor continued, "the matter of power, transmission, and control are relatively simple things to work out."

But from observation I have found that well-built four-wheeled tractors are easily handled and do excellent work even though they may have a little side draft.

One of the most interesting four-wheeled tractors is one that resembles an automobile in appearance except for an exhaust pipe at the top of the hood, and when equipped with rubber tires will travel as high as 12 miles an hour on the road. This same machine has a working speed for heavy field work up to 3½ miles per hour, and will pull two plows. It is spring-mounted and has a belt pulley guaranteed to develop 16 horsepower. The total weight is 2,700 pounds, and the price is $750, which, however, does not include the rubber tires for road work. They are $125 extra.



The way to size up a tractor is to see it work in stubble and hardpan, in dry ground and wet

One ingenious tractor is made especially for cultivating, mowing, and all field work that two medium-sized horses can do, besides developing enough power on the belt for grinding, wood-sawing, and running a small ensilage cutter. This tractor costs $385 complete, with two cultivators. It will straddle corn rows, and when the corn is too high for cultivation in that manner you can narrow it so it will go in between the corn rows.

It has a two-cylinder engine and uses about 10 cents' worth of fuel per hour. The machine is only five feet tall and weighs a thousand pounds—just about half as much as two horses to do the same work would weigh. One man wanted to use it with an eight-foot mower and asked the manufacturer whether it would pull an eight-foot mower. The manufacturer told him no, that it was guaranteed to pull only a six-foot mower. But when he got to figuring the amount of hay a tractor pulling a six-foot mower would cut in a day of ten hours, he found it was 50 per cent more than his best team of horses had been in the habit of doing.

Few farmers, except the users of tractors themselves, realize the amount of work accomplished in the time required to get horses ready for work, for resting them, and for taking care of them in the evening.

This light cultivator-tractor is in a field which has been hardly touched, although two other machines, larger and more expensive, will cultivate also. But at present the main work expected of tractors is plowing, disking, and heavy hauling.

Mechanical Horsepower Explained

ONE point in which tractors differ greatly is their ability to turn short corners. This is fully as important when hauling manure spreaders, binders, and such machinery as it is for plowing. One tractor, a rather heavy one, has the plows hinged behind in such a way as to permit the operator to raise them and back into fence corners. The actual power required to lift the plows is supplied by the engine. Several tractors accomplish almost the same result by their peculiar construction. The two front wheels are the driving wheels, and are rather high. A third caster wheel follows in the rear. On a smooth floor a tractor of this kind can be operated so as to give the appearance of waltzing, and in the field it can turn short corners and will back up and start the plow within almost a hair's breadth of the desired place. The plows are carried under the tractor, and are raised and lowered by power. This form of construction has its advantages, but also one disadvantage: the plows are rather hard to get at for cleaning and changing shares.

The lowest price at which a reliable tractor can be sold is an important question that time only can decide. At present the lowest priced tractor that will pull two plows sells for $350 fully equipped, is guaranteed to deliver eight horsepower at the drawbar and sixteen at the belt. This particular machine does not have the finished appearance and the enclosed hood of the more standard makes, but at demonstrations has done good work.

One popular tractor is designed so the main driving wheel runs in the furrow. Sharp lugs on the face of the wheel not only keep it from slipping but penetrate the bottom of the furrow and thus have a certain subsoiling value.

Just how long a tractor will last is a hard thing to say. A great deal depends on the material and workmanship, but fully as much also depends on the skill in handling. Those who are naturally handy with machinery will get best results from tractors.

The customary guarantee of most tractor companies provides that any defect in material or workmanship that may develop within a year will be made good. That does not look like a very strong guarantee when the life of a modern tractor is expected to be around ten years. On the other hand, the average tractor is subject to overloading, unskilled handling, and so much general abuse that too liberal a guarantee would be commercially impossible unless the price of tractors was greatly increased.

One company makes a thoroughly fair proposition, which is this: It guarantees its tractor in the customary way for one year, and also agrees that if the user will return it to the factory any time within three years the company will entirely rebuild the machine, replace worn parts with new ones, put the machine into first-class shape, and return it to the owner accompanied by a new one-year guarantee, all for the price of $65.

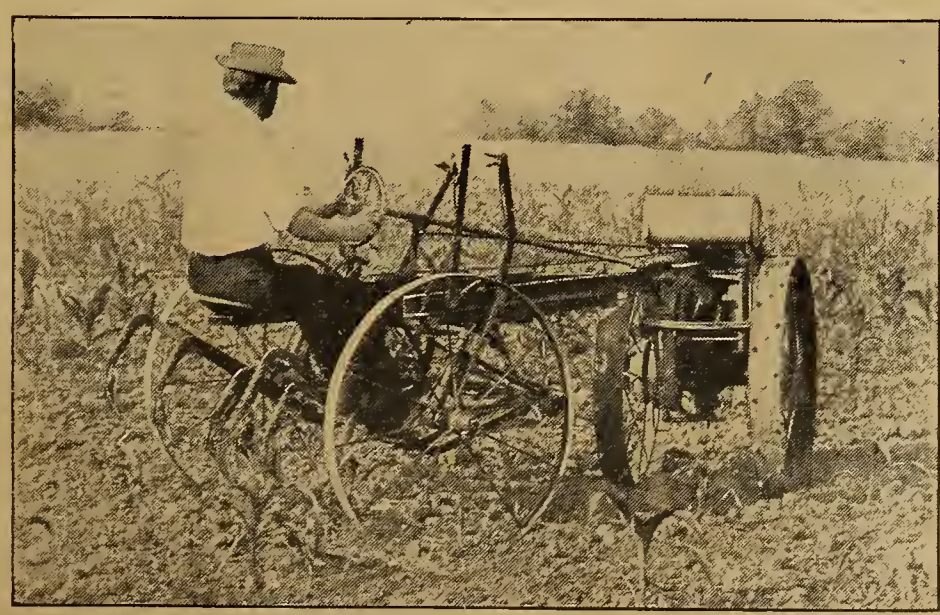
Some tractor users I have talked with admit that they made a mistake in getting their first tractor, but that instead of being discouraged they profited by experience, and later got the one they should have had in the first place. In every instance the first one was too small: they overestimated mechanical horsepower. What is horsepower? Let's see.

One mechanical horsepower is equivalent to the ordinary pull of a 1,500-pound horse walking along at the rate of 2½ miles an hour. In an emergency, and under the whip, a horse can pull a great deal more than one horsepower—three or four times as much, sometimes more.

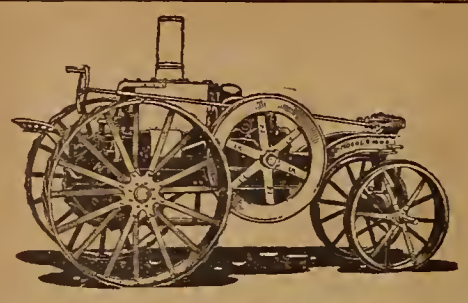
But a tractor will develop safely only about 25 per cent more than its rated horsepower, and that only for a short time. Experience has shown that under field conditions mechanical horsepower is about two thirds as efficient as horsepower from horses.

This means that a 12-horsepower tractor will do about the same work as a team of eight horses. To be still safer, divide the mechanical horsepower by two and you will get the horse equivalent. This allows for ordinary emergencies such as getting stuck in the mud or pulling up a steep hill. In other words, an eight-horsepower tractor will do the work of about six horses when conditions are ideal, and of about four horses in ordinary farm practice.

One machine is so constructed that if the main drive wheel gets in a place where the traction is bad, part of the power can be transmitted to another [CONTINUED ON PAGE 10]



Cultivating corn and hoed crops is the work of this tractor. It has the power of one good team



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Selling Weed Seed

Profits Decrease When Wheat is Not Pure

By CARLTON F. FISHER

"IN CLEANING 891,000 bushels of spring wheat received on the Chicago market, 12,780 bushels of weed seed were obtained," J. C. F. Merrill, secretary of the Chicago Board of Trade, said recently. "And most of that wheat was low-grade, two thirds of it being No. 3, No. 4, or rejected. Rejected is a classification which means that the wheat has such an admixture of foreign matter that it is not entitled to any grade."

In his youth Mr. Merrill operated a horsepower thresher. Then he became a grain buyer. And he has seen thirty-eight years of active service in the grain business.

"Weed seed is responsible for some of the worst and most needless losses grain growers have," continued Secretary Merrill, "and about the only way to stop it is to show every man who sells grain how he is affected personally. I am glad that FARM AND FIRESIDE is taking up the weed-seed question.

"Threshermen get paid by the bushel," he went on, "and they are not always as particular as they might be to keep weed seed out of the grain. So the farmer pays for having the weed seed threshed. Then when he hauls his grain to market he gets docked for having weed seed in it. So far he has lost twice.

"Then the dealer, who has docked the farmer for the weed seed in the grain, cleans the grain and sells the weed seed. Mustard seed is disposed of largely to pickle factories. Other weed seeds are used for poultry and sheep feed. At the Union Stock Yards thousands of bushels of weed seed are fed every year. Sheep that have just come off weedy pastures relish them. Weed seed now sells for around $15 per ton. Usually it's about one third the price of corn.

"Finally, the manure from the sheep pens is dried, ground up, put into sacks, and sold all over the United States as fertilizer."

Sheep Grind Feed Fine

When questioned as to the chances for the weed seed in sheep manure to germinate, Mr. Merrill gave as his opinion: "So far as I have observed there is little danger of that in sheep manure. Sheep grind their feed very fine, and as the manure is handled in the stockyards, it goes through some fermentation. A good deal of straw is used in the pens, and this mixed with the manure heats to a certain extent. When fermentation has stopped, the germ in the weed seed is dead, or nearly so. Nurserymen and seedsmen use tons and tons of this dried sheep manure, and it doesn't seem to give them any trouble. I use it on my garden right along. But if weed seed is fed to cattle there is danger of inoculating your farm with undesirable weeds.

"I'll tell you a little story," he went on, "but I don't want to be quoted as recommending weed seed as a cattle feed even if I did have good success.

"Besides being a business man I have a small farm and keep some cows and poultry. I buy mustard seed and elevator dust for my chickens. By elevator dust I mean the points of kernels—little chips of grain. It makes good chicken feed. Well, I wouldn't dared to have fed the mustard seed to the cows,—they are dairy cows.—but by accident my man used it in the ration.

"He found it didn't hurt the cows. Then he used two quarts of mustard seed in the corn-and-oats ration that he feeds twice a day. The cows also had mangels and carrots three times a day, and some corn fodder besides. But the only way in which the ration was changed was mustard seed in place of some of the grain. Immediately the cows gained a quart a day in their milk, and they lost that gain when the mustard seed was stopped. When you come to think of it, this is not very surprising, because I believe mustard seed is rich in oil and also has some protein.

"But as a result of feeding that weed seed, I discovered on my farm the introduction of weeds new to the soil, and I have no doubt they came from the manure of those cows."

Then he told briefly how weed seed took fertility and moisture out of the soil and occupied space that belonged to the grain.

"What method do you propose for cutting out this loss?" I asked.

"First of all there must be an understanding," he said, "of the conditions under which weed seed can best be suppressed. The weediest wheat is spring wheat grown in the Northwest. Some years the oats is weedy too. Especially when the soil is dry, and the seed wheat is dry from standing in bins, the crop will be slow in starting. Under such conditions the weed seeds will get started ahead of the grain, and as a result you get weedy wheat.

"Winter wheat contains less weed seed than spring wheat. This is why: Most weeds found in wheat are tender annuals that can't stand the winter, and what few seeds do start in the spring cannot compete with the wheat that already had a good start the previous fall.

"Another reason for so much weed seed in the Northwest is indifference toward cleaning the seed. A large percentage of the wheat growers formerly came from European countries where three acres and a cow were considered a good-sized farm. So when they found that Uncle Sam would give them 160 acres of land free just for homesteading it, it looked like an empire. The normal result is little attention to detail, and weed seed is the result.

"I used to live in New York State, and there hauling dirty wheat to town would have been a neighborhood disgrace. In fact, my principal rainy-day job was to turn the fanning mill. If every man who sells wheat would put it through a fanning mill it would always reach its highest grade."

When I asked him whether the situation was getting better or worse, he said: "Oh, much better. The weed seed in wheat is not one half—possibly only one third—of what it used to be. But there's still plenty. The Minnesota markets, especially Duluth and Minneapolis, get a great deal of weedy wheat. It is so bad that the inspection rules of Minnesota require the weighing of at least a peck and a determination of the weed seed. Then a certificate is made out specifying the weed-seed content. The most common weeds are wild mustard, wild buckwheat, and smart weed."

Perhaps the most important thing of all is the way weed seed affects the grade of grain. Mr. Merrill admitted that the grain business has been criticized because of certain findings. For instance, some wheat that is bought for No. 3 is sold for No. 2. Likewise No. 2 for No. 1, and so on. It looks as though the grain dealers deliberately juggle the grades in some way to their personal profit. This is Mr. Merrill's explanation.

"Here," he said, taking up a pamphlet, "are the grades of grain as established by the State of Illinois. No. 2 red winter wheat, for example, must, among other things, be clean and weigh not less than 58 pounds to the bushel. No. 3 is a wheat that's not clean or plump enough for No. 2 and weighs as low as 55 pounds to the measured bushel.

Dirty Wheat Sells for Less

"Now, when a farmer sells his wheat, if it is dirty it has to take a lower grade than it might otherwise be entitled to. Or if it is clean and weighs 57½ pounds, it still goes as No. 3. In that case the farmer has given a much better wheat than the No. 3 grade called for, because he gave 57½ pounds to the bushel when only 55 was required.

"But competition in the grain business forces a business man to give the minimum quantity. That is perfectly honest. When you buy wheat you get as close to the minimum of the grade as the dealer can make it. It's simply a case of asking for a yard of goods and getting just a yard instead of a yard and two inches. Lots of cars shipped to market are better than the minimum requirements of the grade the wheat is in. Consequently when that grain is cleaned and standardized, much of it takes a higher grade. Farmers could just as well weigh and grade the grain themselves and get the same benefit."

This explanation should not be considered the full answer. The grain business is too complex for that. But it shows that the way to sell weed seed, if at all, is to sell it separate from the grain. You wouldn't try to sell a mixed car of hogs, pigs, and chickens. They'd all bring better prices if separated and graded into lots of uniform sizes. The same thing is true with the different grades of grain with weed seed mixed through it.

Inspectors rejected nearly 5,000 carloads of grain in Minnesota markets last year because it was weedy. Remember also that a weed takes moisture and fertility from the soil and occupies space that rightly belongs to crops. More fall plowing and better tillage will reduce the losses due to weed seed.

Cleaning the grain before marketing is of immense importance. Use a small gas engine to run the fanning mill. Then it won't be such a hard job. Feed the weed seed and screenings to the chickens, and thereafter clean the seed grain.

In referring to the investigations Congress has made of the grain business, Mr. Merrill said: "We welcome inquiry because people should know these things. But as I told the committee before which I testified, I'll say to you, 'what the farmers need most is not government inspectors, but fanning mills.'"

LEST we forget, let us repeat that two thirds of a pound of borax to ten cubic feet of manure in the pile will keep the flies from breeding. Borax can be bought for from five to ten cents a pound.

"THE soil that grows jimson weeds can grow wheat, though it would rather grow jimson weeds." So says a circular from the Illinois Agricultural College. True—and the soil that will not grow weeds won't grow anything else.

A Boy Corn Grower

By R. G. Miller

IN SPITE of a severe drought, 144 bushels of corn were raised on an acre by a twelve-year-old Mississippi boy in 1914. The corn won a prize of $25 for being the largest yield in the county. It cost the boy 23 cents a bushel to raise the corn.

The 1915 acre of this expert corn grower, William Smith of Recluse, Harrison County, Mississippi, is better than normal and looks as if it might produce 150 bushels. His land has been made rich by the liberal use of barnyard manure and smaller amounts of commercial fertilizer. He always plants a crop of peas, clover, or some other cover crop. This is turned under in the early spring. He saves a part of the hay.

Willie joined the Boys' Corn Club three years ago. He obtained from his father the use of an acre of ordinary piney woods land that had been partly stumped the year before. By good preparation, little fertilizer, and thorough cultivation he made 80 bushels of shelled corn on his acre the first year, winning a prize of $20. With this money he bought two yearling steers which he raised and broke for work, feeding them part of the corn he had raised. He later traded these cattle for 10 acres of land.

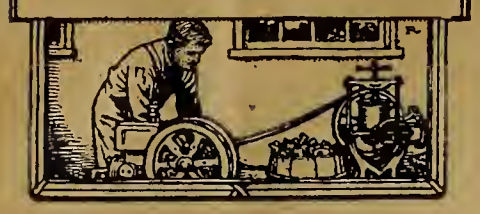
The second year he had put his land in better condition by growing a winter cover crop and careful handling. That year he raised 106 bushels of corn on his acre. For this yield he won a prize of $10. He bought a heifer with this money, pastured her for a while on his 10 acres of land, and sold her for $15. He then started a bank account.

Twenty-eight bushels of the 1914 crop were sold for $47. With $35 of this money he bought a good cow and calf. He has learned that the way to market his corn and other product from his acres is through live stock, and he has also found that good stock will return him higher prices than low-grade scrub stock.

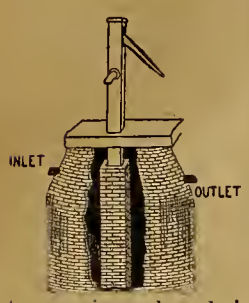
Willie Smith now has to his own credit 10 acres of fertile land, a good cow and calf, and more than $50 in the bank. His bank account will be greatly increased when his 1915 crop is harvested. More than this, and of more value, he has a knowledge of scientific farming acquired by experience.

E

Headwork Shop



Cistern Water Always Clear



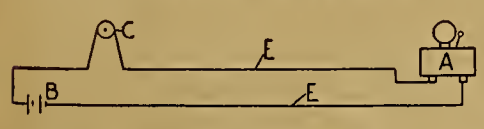
MANY are the makeshift devices for keeping the cistern water clear. Here is one that is thoroughly effective. Build a flue eight inches square (inside measure) from the bottom of the cistern up to near the top, using clay brick laid with cement mortar. But do not plaster it. Put the pump inside of this flue and let the water run into the space surrounding it. Have the inlet a little lower than the top of the flue, and the outlet a few inches lower than the inlet. The water in the flue will remain on a level with that outside. Only clear water will filter through, and more will run in as it is used. J. C. LINDSEY.

EDITOR'S NOTE: A similar but simpler way to secure clear cistern water is to build a brick dome on the bottom of the cistern and pump out of that.

Some Door-Bell Hints

NEARLY everyone knows about door-bells, but the job of installing one is simpler than many imagine. A is the bell, B the batteries, C the push button, and E the wires. The total cost of material need not exceed a dollar.

First select the place for the bell or buzzer (whichever you choose to have), then the place for the push button and a suitable location for the batteries. The

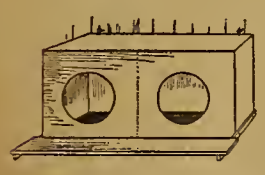


cellar is a good place for these, and two dry cells are sufficient. If you have old batteries from a gasoline engine or auto you may use them if there is any life left. To increase their strength punch holes in them with a nail and soak in strong brine, taking care not to cover the terminals.

Then run your wire as shown in the diagram, connecting the one side of the batteries direct to the bell and the other side to the push button. Then push the button and the bell will ring. No. 18 or 20 rubber-covered copper is standard bell wire.

Running the wire so it will not show calls for ingenuity. You can take it through the cellar as far as possible, then up through the floor and along the baseboard or any place where the wire does not fall in the sight of every observer. You can sometimes take it up between partitions or along the edge of a door frame, or behind cupboards. Fasten the wire with small staples. When you put the wire through a place that requires a hole, do not take a one-half-inch bit. A little gimlet hole is enough. J. E. ZONG.

Nest That Biddy Likes



WE CONSIDER the nest we are using ideal both as to utility and cheapness of construction. It is simply an orange box. The partition in the center divides it into two roomy nests. Make it this way:

In the bottom of the box cut two round holes, each seven inches in diameter. Use this as the front of the nests. Now remove the bottom of the nest and substitute inch-mesh woven wire for the wood. Cut two strips of board one inch square and twenty inches long. Nail one across each end of the box so the projection will hold the alighting board. For this you can use side board that was removed.

Get two large screw-eyes and fasten them into the top of the nests close to the back edge. Hang it wherever you wish on eight-penny nails driven into the side of the building to hook the screw-eyes on. Your nest is now ready for straw or other material that will make biddy comfortable.

The side of the coop forms the back of the nest. As the straw grinds into fragments it falls through the wire bottom instead of forming a harboring place for mites. You'll have no more eggs broken in the nest, for biddy can protect herself from intruders, doing her duty in comfort and security. E. H. RAWSON.

Many Uses for Sunflowers

IN 1914 we rented a farm in the treeless part of Oklahoma and missed the shade for our chickens. To overcome this lack we planted a quart of Russian sunflower seed in the chicken yards and all around the poultry houses wherever there was room for a hill.

Where the soil was not rich enough we made it so. Sunflowers need a fertile soil.

We also sowed a patch of rape and sunflowers together and found that the rape made an excellent supply of green food for the chickens, and other stock. The mature sunflower leaves were preferred by cattle and horses to any kind of grass or hay. And we found the sunflower seed, in combination with other grain, excellent for stimulating egg production in winter. MRS. W. B. DAVIS.

Hinges Help in Cleaning

I BUILT the nests in our henhouse with the special idea in mind of making them easily cleaned. Ordinarily that is not a pleasant job; consequently old straw is left in the nests too long and allows them to get lousy.

The bottom board was twelve feet long by one foot wide. To it were nailed short boards, twelve inches square, which separate the nests. Then a two-inch slat was nailed to the front of these short boards, with two inches between it and the bottom board. The bottom board I hinged to the wall with three large gate hinges.

I also hinged two 2x4 legs to it. When they are pulled out, all the nests drop down, dumping out the old straw and dirt. Another slat is nailed to the top of the short pieces, and a wide board hinged to the wall drops down in a slanting position over the top. This prevents the chickens from roosting on the nests.

I also have the regular roosts hinged so that the front may be lifted up and hooked while I clean under them. H. E. WAID.

Key as Buckle Tongue

I HAD several old buckles with no tongues on them, so I tried to make some tongues out of wire, but could not bend the wire short enough for the eye.

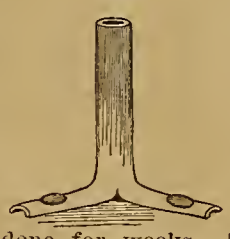
I then picked up a cotter key which was just the right size, and cut one leg off and used the eye part as the tongue. By using the proper-sized key you can make a neat and quick repair. WM. L. SCHICK.

Rats Poisoned Unawares

WHEN I was a boy our farm was alive with rats. We noticed the rats were eating the grain and water of a sitting hen in a corner of the barn, so when the hen hatched and was moved we put strychnine in the water, and the first night killed 23 rats and the second 19.

Besides this a good many more went away to die. The best way to get rid of rats is to make them accustomed to drink at one place and then poison the water so as to make a big slaughter. WM. H. OVERHOLTZER.

Slits for Calf-Feeding



THOSE who feed young calves by hand know what it is to hold their fingers in a calf's mouth until the little fellow finishes his meal. Sometimes this has to be done for weeks. The device shown in the sketch is worth many times the cost and trouble of making.

It is a short piece of rubber hose, three-fourths-inch in diameter and split for a distance of two inches at one end. Each of these split sections is bent back and nailed to the bottom of a wooden pail with short flat-headed nails. Roofing nails are just the thing. Teach the calf to suck the end of the hose. He will find he can draw plenty of milk through the apertures where the split ends turn back. FRANK G. DAVIS.

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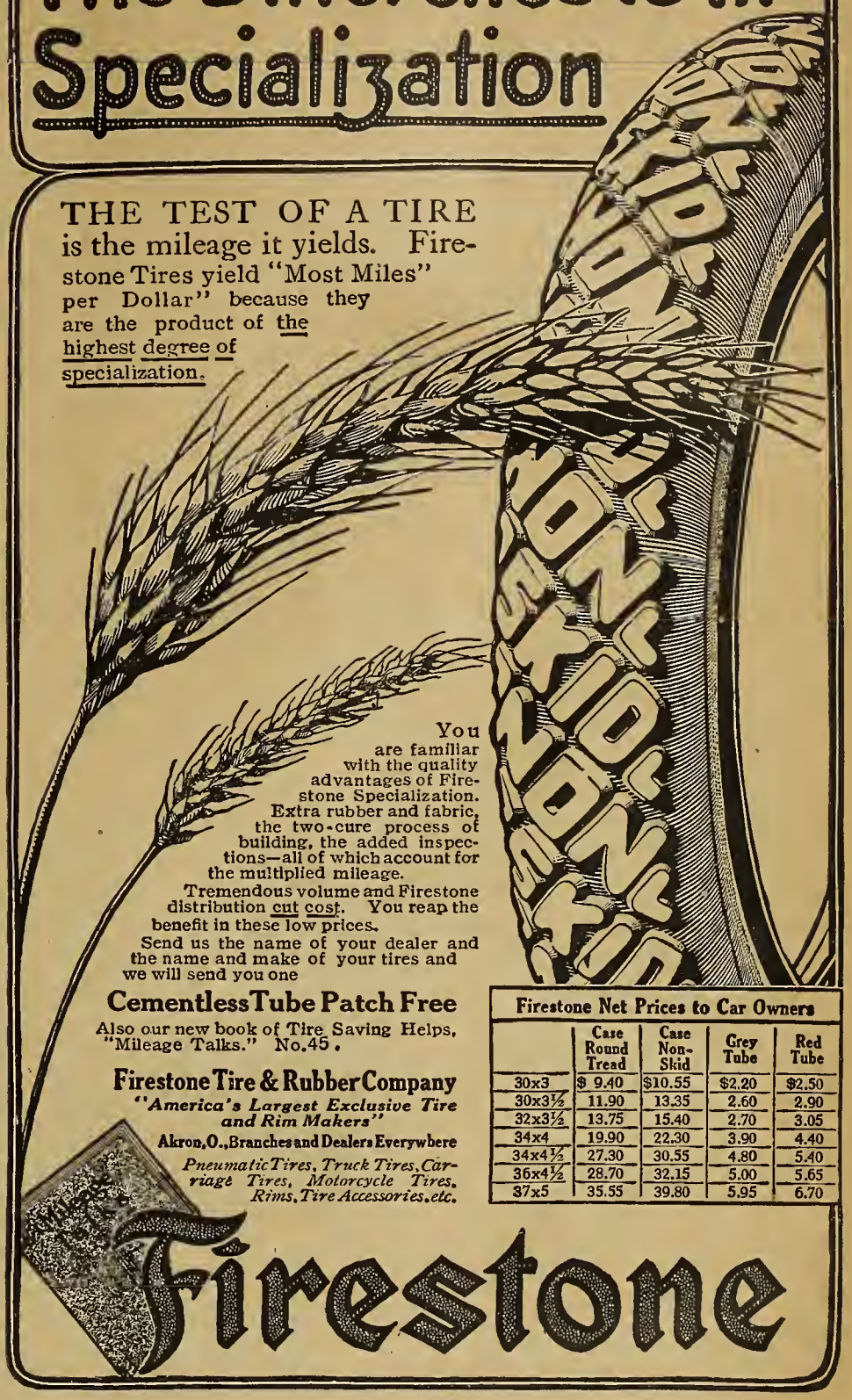
THE TEST OF A TIRE is the mileage it yields. Firestone Tires yield "Most Miles" per Dollar" because they are the product of the highest degree of specialization.



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34x4	19.90	22.30	3.90	4.40
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37x5	35.55	39.80	5.95	6.70

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The ground covered by an average stump and its roots will grow 25c. to 50c. worth of food crops per year. A hundred-stump acre will produce $50 worth of food per year after clearing. Why leave these dollars buried under stumps and pay taxes on stump land when the whole world offers big prices for American farm products?

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Will get them out in cold and wet weather, when you have plenty of time. Clear land now, and crop it next spring. This explosive is low freezing, hence works well up to winter weather. It takes less Stumping Powder in wet weather than in dry. Turn the wet days of Fall into cash.

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1915

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FARM and FIRESIDE

THE NATIONAL FARM PAPER

Published every other Saturday by
The Crowell Publishing Company
Springfield, Ohio

Branch Offices: 381 Fourth Avenue, New York City; Tribune Building, Chicago.

Entered at the Post-Office at Springfield, Ohio, as Second-Class Mail Matter.

Subscription Price

One year (26 numbers), fifty cents. Three years, one dollar. Extra postage for Canada, twenty-five cents per year.

About Advertising

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HERBERT QUICK, - - - - - - - Editor

September 25, 1915

Taxes

THE tax burden is growing greater every year. It will continue to grow greater since we are all demanding more and more of the Government of things that cost.

In view of the fact that the burden must be carried, it is rather strange that more people are not considering how it may be carried with the least of hindrance to our progress. With any other burden we do that very thing. If it is a suitcase, we get a stick, run the stick through the handle of the suitcase, and carry it over the shoulder. If it is a log, we put a handspike under each end and carry it by that. If it is a watermelon, we buckle a shawl strap about it.

We study the best way to carry every burden but taxation. As to that our utmost wisdom extends only to hiding the load under a pile of the straw of indirect methods and denying that it is a burden at all—but it's there, never fear, and the weight of the stuff used to conceal it makes it all the heavier.

Instead of taxing people on what they earn as well as the things they enjoy without earning them, why not tax unearned wealth first?

And instead of taxing industry and business, why not see whether it would not help us in carrying the burden if we placed it on monopoly?

The German Crisis Past

EVERY American should take care that he understands just what the meaning is of the victory which President Wilson has won in the controversy with Germany over the Lusitania case and others of a similar nature.

It is a victory which will be written large in the history of these troublous times; and while princes and generals and men with guns in their hands have been winning victories for war, American diplomacy has won a battle for peace.

Germany has accepted the demands of the Government of the United States. German submarines will no longer sink unarmed merchant vessels without warning except according to the rules of international law—that is, the German commanders will visit such ships and search them to see whether or not they are lawful prizes which may be taken into port and sold, or sunk if that is not practicable.

This is all President Wilson ever demanded, and it is no more than Germany as a civilized nation ought to have been expected to concede. Her surrender of the policy she adopted may hurt her pride, but it will not injure her much from a military point of view. Her submarine warfare was not fruitful of results. She sank a great many vessels, but she made no real impression on British or French commerce.

Now that Germany has conceded the righteousness of the President's contention in the Lusitania case—in fact, if not in words—those American citizens who have criticized so bitterly all who called attention to the illegality and inhumanity of this new use of a new engine of war under unheard-of conditions will, of course, be willing to admit that they also were mistaken.

Alfalfa-Seed Prices

ALFALFA will not seed in wet weather, and a moist season in Kansas and Nebraska is unfavorable to the production of a large supply of seed for the market.

That kind of season occurred this year. Oklahoma, Kansas, Nebraska, and South Dakota produced very little alfalfa seed.

The war cut off the imports—which is probably a good thing for the farmers, as nobody should sow imported seed.

Farmers who expect to sow alfalfa should keep their eyes open for good seed at reasonable prices. Seedsmen are quoting prices of from $12 a bushel upwards, with the Grimm alfalfa at 40 cents a pound.

We should say that if good Montana or Dakota grown seed of the ordinary variety can be obtained, the Grimm is too high except when the grower intends to use it for experimental purposes.

Market Reports Planned

THE government Office of Markets is testing the feasibility of daily market reports. Details of the plan have just been announced, but the idea is by no means new. In fact, when the Office of Markets was established about two years ago, W. J. Spillman, in charge of Farm Management, had already conceived the idea and believed that there was no good reason why the United States Department of Agriculture should not disseminate market reports as well as weather-bureau notices.

The new Office of Markets has unfortunately been subject to some criticism for its slowness to bring relief for the many market abuses. But well-informed critics have been patient, realizing the strength with which those opposed to more direct forms of marketing have entrenched themselves.

That the plan of government market reports is getting a thorough trial is evidenced by six telegraph wires that run directly to the Office of Markets and which tick away the messages sent from correspondents of the Department stationed at various points in the country.

In addition there are to be telegrams from the principal markets announcing the goods received, and prices. The Office has already made arrangements with most of the railroad and express companies to telegraph the facts regarding shipments.

If destination of cars has been changed for any reason, final destinations are ascertained, and such diversions are also reported.

All this information, when summarized, is then telegraphed to those who desire it. Several branch offices of the Office of Markets, and certain newspapers which have requested reports, are supplied with more elaborate summaries of market conditions. The branch offices are also authorized to issue telegrams to shippers and others, also to render mail service. At present the St. Louis office sends out multigraph sheets to about 200 producers in Missouri, Arkansas, and Oklahoma.

Just how valuable this service will be when fully developed is something which cannot be foretold, but it should at least serve as a check on commission merchants who use the plea of an overstocked market to beat down prices.

COURTESY OF "THE JOURNAL OF HEREDITY"

Having a height of 140 feet, a circumference of 45¼ feet, and a spread of 100 feet, this sycamore growing at Worthington, Indiana, is the largest shade tree in America

Here and in Denmark

THE co-operative packing plants of Denmark are successful. The hams and bacon put up by the Danish farmers in their own plants command the great market of the British Isles as against the best output of the American packers. When a farmer joins one of these co-operative organizations he agrees to sell his hogs to no other buyer for a period of fourteen years. That is why these business concerns succeed.

But if a group of Iowa swine growers should undertake to do the same thing, the Iowa Supreme Court would dissolve the company under the state antitrust act as a criminal conspiracy in restraint of trade. The same would be true in most other States.

We can afford to study closely Denmark's marketing methods and so develop for ourselves a better form of business government.

During the past summer four different crops have been made the subject of government investigation. These crops were strawberries, tomatoes, cantaloupes, and peaches.

Under present conditions a large crop does no one any great good. The consumer seldom receives any material benefit in the way of lower prices. So he doesn't buy much more than in years of ordinary production. Low wholesale prices tend to keep producers from shipping, and perishable products suffer an enormous waste.

The Government's idea is to secure daily telegraph reports from all important carlot-producing sections. This report will include the number of cars shipped daily during the marketing season, together with destination. The movement of the cars is reported every twenty-four hours, so that at any time the actual number going to any market or markets is easily ascertained.

Good Seed Corn

MOST of us test our seed corn to see if it will grow. Those who do not should be ashamed of themselves. But not many understand that the mere fact of sprouting, and of sprouting strong, is not a good test of seed. Each ear is different from every other ear, and there is no way of telling which is best save by planting the ears in such a way that they can be compared as to yield.

On page 3 is told the story of Willard Zeller of Iowa. Mr. Zeller has built up a sensible system of raising corn which has made him a world's champion. It is a very practical system, too.

It costs no more to raise corn from the best seed than from the poorest.

Our Letter Box

Louisiana Fosters Agriculture

FARM AND FIRESIDE: The State Board of Education gives this year appropriations amounting to $69,000 for agriculture. The agricultural schools of the first type were given $900 each. There are 36 in this class. In the second-type class, which have no demonstration farms, there are 15. These schools get $263.93 each. This amount has also been apportioned to the 127 domestic science departments that now exist in the state high schools.

The new creed of diversified farming is growing rapidly in Louisiana, where it has so long remained neglected. The coming generation will reap the benefit and enjoy the wealth of this movement.

S. P. VETTER, Louisiana.

Not Pleased

FARM AND FIRESIDE: An admirer of your early efforts, having recommended subscription to several of his friends, desires to express his dislike of your political discussions, which should not appear, at least not so one-sided and decidedly pro-English. We consider FARM AND FIRESIDE a member of the family, and desire it to continue to be, but we should be compelled to discontinue should we have to cast our eyes over the common newspaper war effusions which we believe should not find room in your publication. GUSTAVE KOEPPE, Florida.

A Bushel of Corn

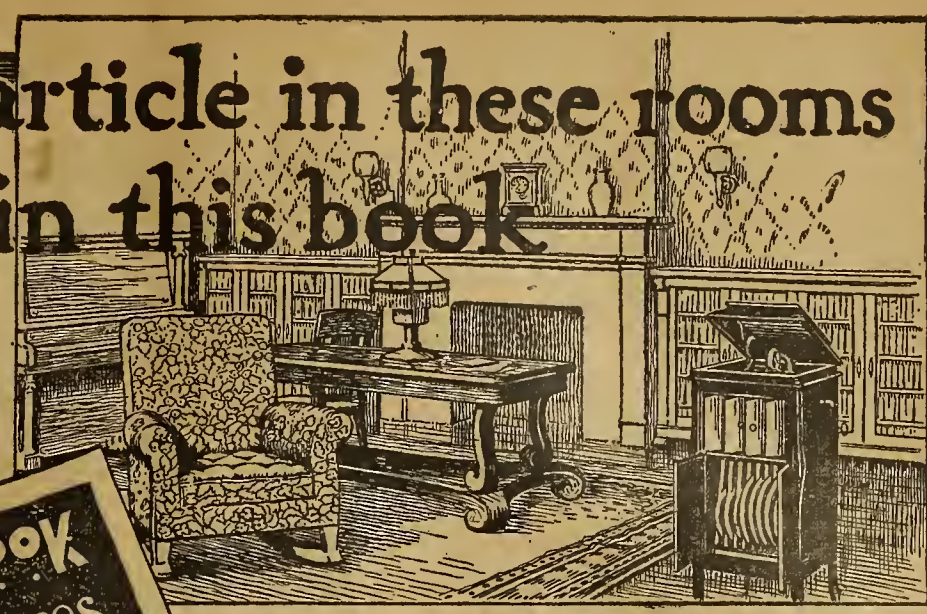
DEAR EDITOR: In looking over last week's issue of FARM AND FIRESIDE I saw where one North Carolina man counts out 112 ears of corn to the bushel. If that man's corn grows as large as our Red Cob corn here in Tennessee, all I have to say is that he is a liberal-hearted man.

This morning I selected 90 ears of corn, shelled the tip end of nearly every ear, and the 90 ears then shelled out two heaping half-bushels after the tip end was shelled off. This is no joke, and if the North Carolina man doubts it let him come to Sunny Tennessee and we can prove it to him.

The usual number of ears of corn allowed for a bushel is 100.

M. B. BURNETT.

You will find every article in these rooms illustrated in this book



Bedroom Sets - - - - $26.00 to $100.00
Cretonne, per yard - - - - - - 7c to 22c
Crex and Rag Rugs - - - - 33c to $13.25
Mattresses - - - - - - $4.98 to $17.00
Pillows, per pair - - - - $1.80 to $4.86

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Rocking, Parlor and Morris Chairs - - - - - $1.80 to $20.45
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Wall Mirrors, 85c to $6.00
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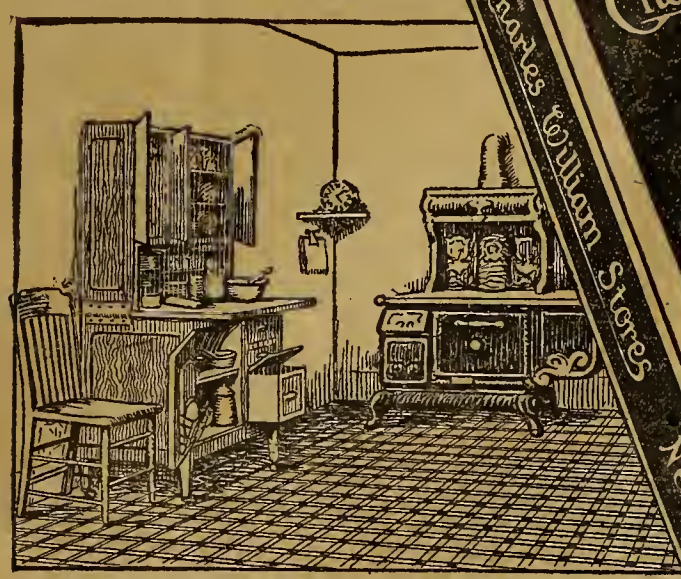

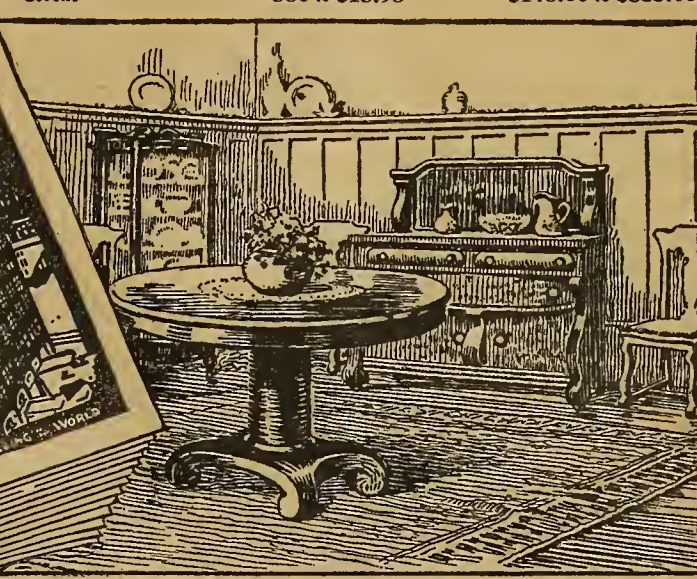

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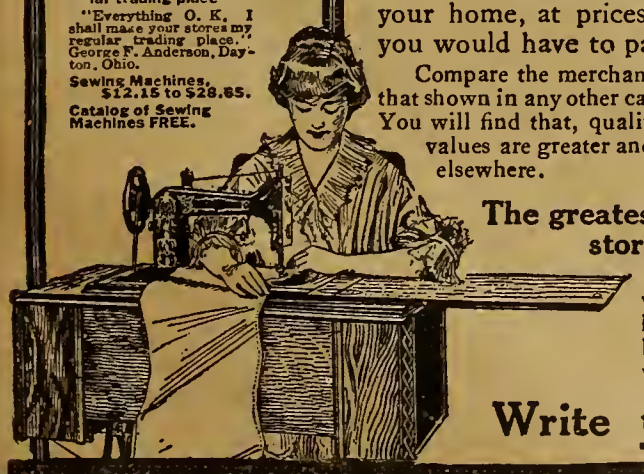

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Farm Notes

Chill Winter is Near

By C. E. Davis

WHEN the chill days come with leaden skies and the cold wiud comes softly from the Northwest, and the far-off trains rumble with a hollow roar, you can think of suow. When it begins to come down in scattering, steady flakes, you will see the farmer chopping stove wood aud the children lugging in big baskets of chips, while the housewife puts ou a pot of cabbage for dinner. By noou the ground is covered and it is coming down fast aud furious. The cows retreat to their stalls, the hens stand mourufully under the wagon in the shed or in any sheltered spot. Then the farmer is glad that his pile of fuel is high and that he has plenty of food for man aud beast, groceries to last all wiuter, and warm clothing for the family.

The children watch the flying flakes and say, "The old womau is picking geese." It keeps on suowiug all night and part of the next day, aud it lies deep over everything. Theu the farmer has to shovel roads to stable, pigpen, henhouse, etc. Even the dog has to be shoveled out and the cats carried to the house for their breakfast. This is a time when it is a mistake to mope over the fire, wrapped up, afraid to go out for fear of grippe, for that very course will give it. Better provide warm boots, mittens, and caps and go sliding, visitiug, etc., defying the cold and breathiug health from the pure outdoor air.

Now is the time to use the kodak around the farm and get views of beautiful winter scenery. Christmas is in the air and happy is the home that has bread and butter and no bottle. Stick a few nuts now and then in the bark of the forest trees for the squirrels, and scatter wheat and crumbs for the birds that stay with us.

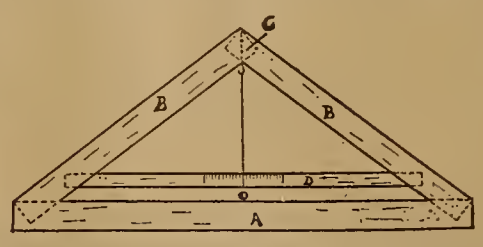
THERE are some snakes that ought to be killed—the veuomous oues. But there is no good reason for killing any of the others. They are, like the toads, among the farmer's best friends.

Serves as Surveyor

THE expense of having a surveyor lay out the plan for tile draiuage sometimes prevents the job from ever being done. For a large system a surveyor's services are really needed. But when there is little doubt as to where the drains should be placed, and the best outlet for them, a man can get along very nicely with the apparatus illustrated. It is indorsed by a prominent manufacturer of drain tile, who says that it is as accurate as a surveyor's level for this class of work.

To make it, take a piece of 1x6 inch board (A) 16 feet long. The bottom must be perfectly straight. To this fasten two pieces (B B), each 9 feet long. The fourth strip (D) is fastened to the side pieces 2 inches above the horizontal board (A). Now hang a plumb bob from a hook at joint (C), as illustrated.

The important thing now is to get A level. Select the most level floor available and see where the plumb bob comes. Then turn the apparatus eud for end aud see if the plum bob comes in the same place. If so, it is level; but if not, keep trying different places on the floor until the plumb line comes at the same place on D when turned end for end. Mark that place. Now put a ½-inch block under one eud of A and mark on D where



the plumb line haugs. Take the block out and put at the other end, and mark the place of the plumb line. Theu take blocks 1 inch thick, 1½ inches, 2 iuches, 2½ and 3 inches. In each case mark the position of the plumb line on D. Place this apparatus iu the bottom of the ditch and you can tell the grade at auy place. If the grade is not correct, scrape off the high places, or fill in when too low. A good tile drain is entirely free from waviness, aud this device will help to get a perfectly uniform fall. If the ditch is not uniform, silt will collect in the depressions and in time the entire line of tile may become clogged.

Is It a Poverty Disease?

A PROMINENT and wealthy man recently died at Lyuchburg, Virginia, of pellagra. This disease in Europe has been pronounced a poverty disease, and in Italy has been called the "hunger madness." United States health physiciaus still think it is a disease of bad nutrition. It is hard to reconcile these views with cases involving people whose diet may be assumed to contain milk, eggs, lean meat, and all those dietary elements which are supposed to prevent it.

Fruits Act as a Tonic

FRUITS and vegetables furnish iron and phosphorus—and therefore are good for all persons, and especially those for whom the doctors would prescribe those chemicals as tonics. Water cress, asparagus, lettuce, cauliflower, onions, apples, apricots, cherries, and peaches all are rich in these elements, as are beans and peas also.

THE town of Fayette, Idaho, has the distiuction of having a horse that served through the Civil War and is now fifty-three years old.

Tractors Do the Drudgery

[CONTINUED FROM PAGE 5]

wheel. This is for the purpose of helping the tractor to meet emergencies, and to use the full horsepower of the motor to the best advantage.

You see the subject of horsepower has a good many sides to consider, and one manufacturer gave pretty good advice when he said: "I'd advise every farmer to let the matter of horsepower alone. If he's in the market for a tractor, the company making the tractor should guarautee it to pull a certain number of plows at a certain depth. A man that needs a tractor is more interested in getting his work done well than in becoming proficient in engiueering mathematics. And if anybody wants to exaggerate what a tractor will do, let that be the user himself. The manufacturer can't afford to.

"I once kuew a youug salesman," he went on, "who was showing a farmer a tractor which did everything it was supposed to do. Then the farmer suggested hitching onto a great big road machine which was much outside of the tractor's capacity. The salesman didn't want to offend the man, so he hitched the tractor to it. It failed, but the farmer had more good sense than the salesman, and bought it anyhow."

Of the places where tractors will and will not work, this much can be said: Most demonstrations have been held on fairly level ground where the soil is firm and in good condition for plowing. Oue tractor company, frankly admits that tractors will not work well iu loose sand or in peaty soils.

I have heard the statement made by a professor of eugineering that tractors will not work well in rocky or hilly land. But one tractor user says that a tractor is more easily operated in stony land than horses because you can stop more quickly and control your power better. Getting a four-horse team to pull uniformly at the spokeu word seems really to be more difficult thau to throw a tractor into gear. There is no shouting at the team or a general tangle-up caused by accideutally whipping the wrong one.

The cost of plowing by means of horses, gas tractors, and steam tractors does not seem to be very much differeut when a great many farms are cousidered. But the general averages are of little importance in a matter of this kind.

It isu't so much the actual cost of the operation as the way in which a good job of plowing done at the right time fits in with the other farm work. A government expert tells of a quarter section of land that was plowed by means of tractors in twenty-two hours.

It took three outfits to accomplish it, but the job was pressing and it would have taken at least a month with a six-horse team with a gang plow. When there areu't enough horses to do the work in the time it ought to be done, the tractor is the only practical way out. To be sure, you don't always need the full power of the tractor, but it's a mighty comfortable thing to know you have the power if you need it.

NOTE: Further information concerning any machinery mentioned in this article will be given on request. Or if you have any questions concerning the best implements for doing your work, tell us your requirements and conditions and we shall help you.—EDITOR.

Live Stock—Dairy

Fighting the Tick

"TICKS take as much as 200 pounds of blood a year from a 1,000-pound steer; cut the milk production of cows nearly 50 per cent; reduce the home price of meat animals from ½ to 1 cent a pound; prevent bankers from lending money to promote the live-stock industry; keep down fertility and production of farms; and make the Southern farmers pay fifty million dollars a year to supply the never-ceasing barbecue of blood." Thus Carl Vrooman, Assistant Secretary of Agriculture of the United States, remarked iu telling of the new tick campaign the Government has started.

"Dip the tick" is the slogan which the Department of Agriculture has adopted for a special campaign against the cattle tick of the South. Blazoued iu big letters this legend will stand out in startling relief upon a two-colored poster which the Department proposes to display in every post-office in the tick-infested country.

"It costs less thau 50 ceuts a head to dip the cattle of a couuty and free that county from quarantine," Mr. Vrooman said, "aud euable its cattle to compete with free cattle at the stockyards. But before the ticks can be cleaned from a county the people in that couuty, by themselves or with the aid of the State, must build dipping vats which cost from $50 to $100 each, and must supply arsenic, which costs about 5 cents per head, to make the arsenical bath that kills the ticks. The people must theu join in seeing that every steer or cow is dipped a sufficient number of times to kill all the ticks iufesting the cattle, aud prevent the seed ticks in the grass from finding a new boarding house."

The Department will co-operate with a county that is ready to dip ticks by seuding its expert field men to supervise the buildiug of vats, to prepare the arsenical bath and to take charge of the dippiug of cattle. The people of a county and State, however, have to provide the small amount of money necessary for the actual dipping.

How to Judge Separators

A THOROUGH skimmiug test is much the best way to judge a cream separator. But you cau learn more about machines than you would at first think, by simply comparing the length of the cranks. A machine that turns hard is usually made with a loug crauk, in order to give more leverage.

At first, a separator with a loug crank may seem to run easier than another, but the longer sweep of the crank and the greater beud of the body make the work extremely tiresome. Other things being equal, a separator with a short crank which does not require the operator to bend over too much in turniug is the best one to buy. As a rule they are easy running or they would uot have short cranks.

For Silo Beginners

IF YOU haveu't a silo, plan for one. The real silo beginner is the mau who begins to think silo.

If early frosts catch the corn when greeu, hurry the frosted corn into the silo. It's the only good way to save immature coru.

But unless frosted, it should not be put in when immature. The ears should be well ripened, but the silo-filling should be done before the leaves are dry.

Here are some truths sent out by the Minnesota Agricultural College:

"The silo walls must be air-tight.

"They must be smooth inside.

"The best type of silo is round.

"The silo should be a substantial building since it has to withstand great pressure."

How much should a silo cost? Depends on the location; but if you get a good silo for from $2 to $5 per ton of capacity you have uot paid au excessive price.

The coucrete silo should be washed inside with a thiu mixture of cement put on like whitewash before filling. This protects the cement from the acid of the silage.

It must be applied as soon as mixed, and mixed fresh every few minutes while the work is going on.

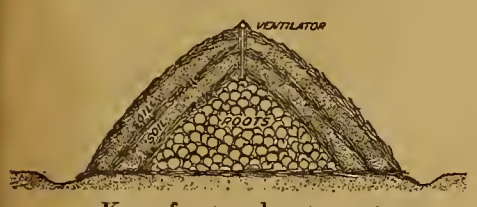
Vegetables in Winter

MANY summer vegetables go to waste every year because of unsuitable storage facility. Besides the vegetables which the housewife can dry or "put up," the following will keep in fresh condition during winter if properly stored: Potatoes, turnips, beets, cabbages, carrots, parsnips, onions, sweet potatoes, pumpkins, squashes, and a few others less important.

One of the first things to do is to sort out perfect specimens. Bruised and broken vegetables are almost sure to decay and spoil others. The sketch shows a convenient way to store beets, carrots, turnips, and similar roots. Do not overlook the ventilator, because a good circulation of air is necessary to successful storage. A tile or two projecting above the roof is excellent for this purpose. The principal soil requirement is that it be well drained.

For storing cabbage the trench method shown in the illustration is one of the best. You can prepare most of the trench very quickly with just a plow.

Here are a few more general directions: Beets especially must not be bruised. Bleeding diminishes their quality. Cut the tops off about an inch and a half from the root. Harvest and store beets and carrots before frost. Parsnips need not, contrary to a common notion,



Keep frost and water out

be left in the ground all winter. Dig the roots after one or two sharp frosts and store the same as beets.

If you prefer to keep root crops in a cellar, you can prevent them from drying out by covering with clean sand or, as a second choice, moist excelsior.

Keep squashes and pumpkins in a dry and fairly warm place—50 to 60 degrees. Harvest them before hard frosts come after allowing them to harden two or three days in the field.

Onions must be kept cool and dry. An attic where the temperature does not

This storage retains flavors

fall below freezing is a good place for onions. After being pulled, onions should lie on the ground in the field for a few days. Then put in open crates for a week or more to dry out. Soft onions never keep well.

Irish potatoes should be dried in the open for half a day, and then put in an airy place for a few days before being stored in the cellar. Sweet potatoes require the same storage conditions as squashes and pumpkins. A dry warm room is good. They keep best when "sweated" for about ten days, at a temperature of 80 degrees, before being stored.

Poultice Does the Work

By E. M. Loveland

NOWADAYS we hear much of bridge-grafting when a fruit tree gets barked or bruised. But everybody is not equal to doing a good job of grafting of this kind.

My method is not fancy, but it does the trick. Just as soon as the injury has happened to a fruit tree, I get some perfectly fresh cow manure and plaster it all over the wound, then bandage the trunk carefully and tightly with a gunny sack or burlap and secure the bandage by sewing. I then place a coat of fresh manure over the outside of the bandage and protect the treated bandage from rain until it becomes hard and dry.

A tree thus treated never will know it has been injured if there is a small strip of bark to conduct the sap by the injured place.

When the treated bandage gets dry it becomes solid and lasting as a plank, and allows a quick and perfect recovery of the injured part. This simple remedy will save many valuable trees.

Watch for the Sport

WOULDN'T you like an animate monument, such as the Baldwin apple has become, to old man Baldwin, the originator of the Baldwin apple?

There are scores of valuable fruits in the way of sport apples, peaches, pears, plums, grapes, nuts, and small fruit being lost to the people simply because Smith, Brown, Jones, and other discoverers of these valuable sports fail to bring them to the attention of the fruit authorities.

The Northern Nut Growers' Association, through their secretary, Dr. W. C. Deming, Georgetown, Connecticut, is making a bid for unknown superior varieties of walnuts, hickory nuts, pecans, hazel nuts, etc. From $10 to $50 will be paid by this association for prize-winning trees.

THERE is an order—not a secret one—in Wisconsin called the State Alfalfa Order. It is composed of farmers who propose to make alfalfa a part of their farm program.

Grow Seed Potatoes

POTATO growers in many parts of the country find it necessary to get seed potatoes from the North, as their home-grown seed "runs out" or deteriorates. The Nebraska Experiment Station has discovered that seed potatoes as good as, and even better than, the Northern seed can be produced at home by growing them under a mulch of straw, hay, or stable litter, spread on the potatoes after planting thick enough so it will be from four to six inches deep after settling.

Is Rye to be King?

WE MAY soon be giving the title of king to the rather plebeian cereal now best known to many for its excellent qualities for horse bedding and as a cover crop.

Improved rye has now been grown and bred with a pedigree for fifteen years by the Wisconsin Experiment Station experts, and over one thousand neighborhoods or centers in the Badger State are now producing pedigreed rye, much of the seed of which is sold for a good advance over common rye.

This improved rye yields over ten bushels per acre more than ordinary rye.

It is sown in Wisconsin latitude from August 15th to September 20th, but farther south can be sown from the last-mentioned date to November 15th.

Not only does the improved rye produce a heavier yield of grain, but it makes a more vigorous cover crop and a heavier green manure crop to plow down when used for that purpose.

The Goober Harvest

WITH peanuts being grown more commonly over wider sections of the country than formerly we can well watch out for harvest helps.

Where an acreage is grown large enough to make necessary a pea harvester and one has not the harvester, quite satisfactory work can be done with an ordinary plow from which the mold board has been removed.

Run the share under each side of the row just deep enough not to separate the pods from the stems. Some run a large plow only once through the row.

The severed peanut plants are then gathered by hand and placed in piles in every third row.

In moist climates the safer plan is to stack the peanuts around poles as bush beans are often cured, placing the nuts inside next to the poles and the tops out to shed the rain and protect from birds, rodents, and the like.

Strong poles, firmly placed, extending about six feet out of the ground, are most convenient.

The stacks can be safely built about three feet in diameter, using cleats or brush for a foundation.

THE spring harrowing of winter wheat in Montana reduced the yield whenever tested, while spring rolling increased it.

REPORTS from Johnson County, Missouri, state that by planting soy beans in the hills with corn the ravages of chinch bugs will be prevented.

Test Radium Fertilizer

HOPKINS and Sachs of Illinois, after experimenting with the so-called "radium fertilizers," announced that so far as they could see the application of radium fertilizer "at a cost of $1, $10, or $100 an acre produced no effects on the crop yield either the first or second season."

A Year to Pay

Not One Cent for Three Months

Never before in the entire history of the gasoline engine business has there been an offer anything like this. And why? Simply because there has never before been produced an engine that could be sold at a remarkable bargain price, so marvelously perfect in every respect that its manufacturer has the confidence in it to say: "Take my engine. Don't send me a cent of your money until, from your own experience with it, you are absolutely sure that it is the engine you want. If it isn't, send it back at my expense. If it is, you may use it for 3 whole months before you make even the first payment and then pay the balance in 6, 9 and 12 months and I'll not charge you one cent of interest." No, you've never seen an offer like that before. Yet that is precisely the offer that Hartman makes on this world-famous Majestic Engine. Why this offer of

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Iron sub-base mounting. Burns gasoline, gas, naphtha, kerosene, distillate.

No Money In Advance

is possible. First, because the Majestic is such an amazing triumph in engine construction that we positively know it will stand up under the severest tests. Therefore, we have no hesitancy in sending it out without a cent in advance, without a deposit of any kind so that you, by testing it out on any kind of work, may let it prove our claims for it right on your own place wholly at our risk.

Second, because the tremendous financial strength of the great House of Hartman permits the extension of more liberal credit terms than have before been offered to the power users of this or any other country. Only the mammoth Hartman institution with its more than $10,000,000 capital, immense buying power and enormous output could afford to make such an offer.

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The Majestic is the "happy medium"—neither too heavy nor too light. Has fewer number of parts—a marvel of simplicity. Perfectly balanced—just the right weight for the power it is designed to develop—no excessive friction. Big improvements in all vital parts—and the most wonderful automatic mixer ever put on a gasoline engine.

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All-Steel Truck, wide-tired wheels, heavy hubs, staggered spokes. Front axle swivel type; wheels, passing over obstructions, do not disturb level of engine. 5, 7, 9 and 14 H-P. mounted this style.

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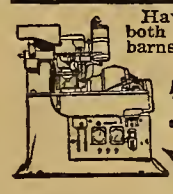

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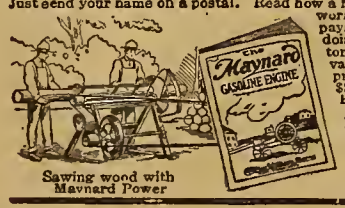

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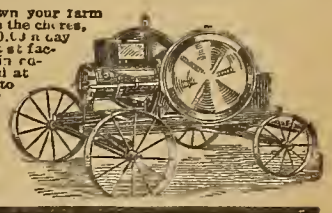

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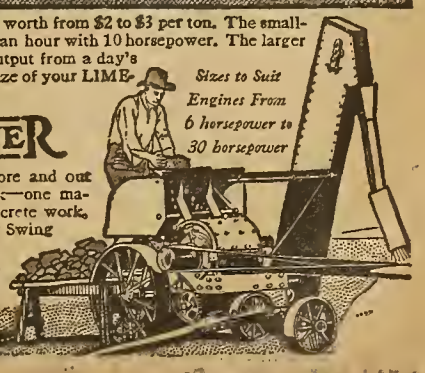

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And, of course, that closer knitting makes your Mayo underwear *warmer*. Good-bye goose-flesh and chattering teeth.

More Elasticity More Warmth

12 Superiorities 12

1. Mayo 10-rib fabric
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3. Mayo rip-proof seams
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6. No binding at elbows
7. All edges laundry-proofed
8. Snug-fitting collar and shoulders
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11. Full-sized seat
12. Big, strong pearl buttons

12 Superiorities 12

You will want to see the Mayo 10-rib Underwear and hold it in your hands. Note the soft, "woolly" warmth. See those laundry-proof edges and strain-proof seams. The arm is full size. The leg is shaped out at the calf, in at the knee and out again at the thigh—just like the leg that will go inside of it. Stretch those Mayo cuffs and ankles — what springiness!

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"There," she panted, "it's for you 'cause you're the prettiest, bestest man in the world, I guess"

The Taming of Big Jim

By CATHA WELLS

WE ALL conceded that there must be some tender point in Big Jim's make-up. Nobody could be as hard through and through as his surface would indicate. He was a big, brawny man, almost past middle age, with a twisted leg that gave him a limping, unsteady walk. None of us had ever heard the reason of his lameness; none of us had ever dared ask; none of us had ever dared ask anything about Big Jim to his face. He had a mighty unsociable way toward questioners. About all we knew of him was that he was touchy on the subject of Missouri, from which we gathered that he must have hailed from the old State or held someone mighty dear who had.

He used to sit by the fireplace in the old ranch house of nights, chewing and spitting tobacco, sometimes whittling a little sliver of pine into nothing in particular, but just seeing how tiny and weak and thin he could make it. Other times he'd sit and do nothing but scowl with those deep-set eyes of his straight into the fire.

We just naturally learned to respect his silence. Of course the lesson came hard, and once or twice proved nigh fatal for the scholar. We had to learn two things. One was not to talk to Big Jim about anything, be it branding calves or strong coffee; the other was not to mention before him anything about Missouri that didn't add to her glory. All of us regulars, as I might say, had won our degrees; but the newcomer, the tenderfoot, stumbled now and then.

I remember the time that a little pale-faced fellow stopped over for the night. He was bubbling over with talk, and all at once he started an ugly story about Missouri.

With an oath Big Jim caught him by the neck and shook him like a terrier. "No man can tell such a story before me. I'm from Missouri," he exclaimed.

"Wait," the little fellow found his tongue, "you ain't heard all."

"I've heard enough," said Big Jim, hoarse with passion.

"But, you see, I'm from Missouri myself."

Big Jim's jaw fell. He loosed his hold. "*You* from Missouri? I never knowingly harmed a fly from the old State. You may be lying,—I hope you are,—but it's saved you this time." And he strode out into the night.

THEN came Pansy. Pansy was the boss' daughter, his baby, he called her; but when she came with her mother to visit the ranch she turned out an eight-year-old girl. The boss himself was a Texan, but he had found his wife up around Kansas City, and the child was straight from the Honu' Dog State.

She was a fairy-like little thing with tawny hair and deep blue eyes. That first night at supper she kept noticing Big Jim. His glumness seemed to bother her. She didn't speak to him, and when everyone else would be laughing at some remark of hers she would glance at him with puzzled lines on her odd little face.

After supper we stood round kind of awkward, not being used to ladies' company, when the boss said: "Draw up to the fire, boys. The missus and the kid won't be here long enough for us to change our way of living."

"No, indeed," the lady laughed. "Pansy and I just came down to see how you and Daddy live. We want you just as you are," and she took the chair he held for her.

Pansy stood undecided before the big fireplace, watching a pile of crooked roots crackle into blaze. Then she turned to where Big Jim sat—his back as usual half turned to the rest of us—whittling on a tiny strip of pine, making it thinner and smoother with each stroke.

"Queer wood to burn, isn't it?" She bent over and looked intently at his whittling as she continued: "It's not like the wood in Missouri, is it?"

WE ALL found ourselves listening for Big Jim's answer. "It sure ain't," came just as natural as though he always replied to those who talked to him.

"Which do you like best to burn, hickory or oak?" And we all knew she was still thinking of Missouri, for down here nothing was known for fire but old mesquite and chaparal roots.

"Well," and Big Jim straightened himself up, "I always thought hickory made a good, hot fire, but I like to watch the color from oak logs."

"Yes, I do too." She stepped in between him and the wall and perched herself on the rough edge of the wood box. "You're making a 'fairy's wand,' aren't you?"

Big Jim rubbed his hard thumb over the knife blade as he gazed thoughtfully at the little whittled sliver. So "fairy wands" were what he had been making all this time—neither he nor any of us knew it!

"Let me see." She held out her hand.

He gave it to her. "You can keep it."

"Oh, no, you must keep it so the fairies will know you like them. Do you know," she puckered her little brow earnestly, "I wasn't sure at first if you were cross or just thinking. But I kept looking until I saw."

"I was—?"

"Oh, thinking of course," she answered simply.

"Did you see those green and blue bubbles in the fire?" she asked him presently.

"I sure did. I was making that 'fairy wand,' as you call it, so if a little fairy came out of those blue bubbles I'd have it ready. You'd better keep it." And Big Jim clicked his knife shut and left the room.

Pansy crawled up in her father's arms. "Isn't he a sweet man? I'm glad he's my friend."

The next morning Pansy was perched on the top bar of the corral fence watching the cowboys select their mounts. With a critical eye she glanced over the fifteen or twenty horses that were crowding together. Finally she stretched out her hand and called:

"Daddy, I'd like to ride that big black one."

An amused twitter ran among us, for she had picked out Big Jim's horse. No one but him was ever permitted to touch Trojan, much less ride him.

The boss laughed. "Choose another, Baby; that horse's private property."

"But I want him," pouted the child. "He's the nicest one here. Why can't I have him?"

"She can," said a gruff voice, and Big Jim, going among the horses, led Trojan out.

The child clapped her hands. "Oh, is he *yours?* Of course, then I can ride him."

"But, Jim," said the boss, "Pansy doesn't know how to ride. He isn't safe for her."

"Yes, he is. He's gentle when he wants to be. If you'll give me some time off I'll ride with the little girl and show her how to handle him"

THUS Pansy stole from under his nose what was dearer to a cowboy than life itself—his mount. Big Jim taught her how to sit, how to hold the reins, how to put Trojan, the only gaited horse on the ranch, into a single-foot or lope. As she grew into a fearless, daring rider, there wasn't much in the way of horseflesh she wouldn't tackle, and she got the habit of hopping any horse that stood handy.

One day—the memory is so strong that I can still smell the burnt hide and hear the plaintive bawling of the calves, for we were working in the branding pen when it all happened, and the air was stifling with smoke and dust—the horses were standing at the hitching rack, outside, patient and quiet, all except Gotch. He, a vicious, untrained brute with an evil reputation, was fretting and pawing the ground when Pansy strolled up. She glanced at him, some of us saw that; but we never thought of warning her, for she surely must have heard something of his devil nature. Perhaps she had, and that was what prompted her to slip the rope from his neck and spring to the saddle.

Gotch reared straight into the air, and when he struck earth again it was a long ways from where he left it—his feet were planted close together and his head low. We were all looking now, for someone had shouted, "Look! Look! That child's on Gotch."

Only Big Jim seemed able to move. He cleared the fence—it took time to open gates—and made one bound for the rack and Trojan. But in that bound Gotch changed his mind about bucking and had started in a furious gallop down the road. Treacherous as he was in most things, Gotch held first place on the ranch when it came to speed, and now with that little wisp of a child clinging to his back he shot out of sight over the hill just as Big Jim hit Trojan's back.

Then the rest of us started—anything was better than waiting. Besides, with Gotch on one of his running sprees it would take more than one horse to tire him out. But we didn't reckon on Trojan nor on his rider. It seemed that they had but one notion between them—to ride down Gotch.

We followed their trail. Once they circled by us, and we saw Trojan had gained a little. Then a hill cut off the view, and when we reached the top neither horse was in sight.

Perhaps we prayed. What do men do when powerless before danger? Ask those who sit at home and read. I only know we dug our spurs into our reeking horses and plunged on. Some of us whimpered. Don't ask who; 'tis a wonder we didn't bawl.

Suddenly Gotch was coming toward us again, faster than ever it seemed; but Trojan, his sides bruised and bleeding from Big Jim's urging spurs, was closing in. Big Jim, standing straight in his stirrups, was swinging his lariat high over his head. They passed us. We saw the little ashen-faced child clinging piteously to her saddle bow, and heard Big Jim say, "Steady, Pansy. Sit tight. Steady, steady." Then his rope sailed out and with a little whizzing sound settled down over Gotch's wicked head. The horses were pulled together and Big Jim's arm closed swiftly around the fainting child and lifted her over to Trojan's back.

THE time for Pansy and her mother to go back to Missouri came all too soon.

"I am going to have a big dinner party the day before I leave," said the child. "I want you all to come. It's somebody's birthday," she added, with a sly little nod.

We came—every last one of us. 'Twas a queer gathering for a child's party. Bronzed, rough-looking cowboys, some with gay silk handkerchiefs knotted around their necks, all with clanging spurs and high-heeled boots, polished and slicked, gathered around the table.

The talk wasn't as natural and free as usual—the occasion was too momentous. A real dinner party wasn't to be treated lightly. If anyone talked too loud the rest of us scowled, and he immediately sank below the surface of things, as it were. However, the dinner was on the whole a success.

At the end Pansy went over to the cupboard and struck a match. Then she came toward the table carring a tiny white cake ablaze with candles. She walked gingerly and set the cake down before Big Jim. "There," she panted in relief, "it's for you 'cause you're the prettiest, bestest man in the world, I guess. You needn't smile," the child frowned at the rest of us, for she didn't know the difference [CONTINUED ON PAGE 13]

The Housewife's Club

Most every woman has originated some device to make the housework easier. Write and tell us about your conveniences. Aside from making a little pin-money, perhaps you will be helping others; and that is what the Housewife's Club is for. Letters should be written in ink, on one side of the paper only, and each item must contain not more than 250 words. We suggest that contributors retain copies of their contributions, as none can be returned. Address Housewife's Club, *Farm and Fireside*, Springfield, Ohio.

Substantial Side Table

By Charles McCoy

THIS side table for your dining-room is worth making.

First, ask your blacksmith to get you four lengths of rod iron, 2 feet 10 inches in length, ¼ inch in diameter, each fitted with a circular boss about the size of a 25-cent piece at one end, and threaded for about two inches on the other end to receive a nut.

Inquire of your storekeeper where you can get 68 empty spools of uniform size.

Get four side stays of clean hard wood 18 inches by 2 inches by 2 inches. Shape the ends of each like spools, and bore in center of ends with a ¼-inch gimlet. (Fig. 4.)

Get two length stays of the same material, 3 feet by 2 inches by 2 inches, and treat their ends in the same manner. (Fig. 5.)

Get a well-seasoned inch board to make the table top, 3 feet 4 inches long by 22 inches wide. (Fig. 2.)

Get a board 3 feet 4 inches long by 9 inches wide, and cut out the back as in Fig. 1. I make my design on paper, cut it out, lay it on the board, and trace its outline with pencil. Then I am ready to cut it out of the board with a fret saw.

Get two pieces of board 22 inches by 6 inches, and cut them as in Fig. 3 for the sides of the table.

Bore the leaf with a gimlet at each corner at an exact point ascertained by laying side and length stays down flat on the leaf.

Attach the back to the leaf with three screws, and the sides to the leaf with two screws each.

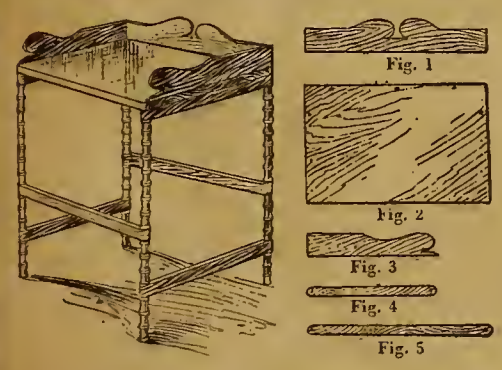
Having done all this the legs must be built. Have a glue pot ready. Slip a spool onto each iron rod; then as each succeeding spool is put on dip one end in glue. When three spools are on, slip a side rail onto each pair of legs, then three spools on each leg, then the length rails, then nine spools on each leg, then the top stays. Slip the rods through the holes you have made on the leaf, slip a spool on each rod, and screw down the nuts.

Four spools now remain, which are hollowed out to fit over the nut and to glue onto the spools below.

A brass stud to cover the holes in the last four spools gives a nice finishing touch.

Sandpaper all the surfaces until they are perfectly smooth. Coat them over with linseed oil to fill all the pores, and let the table stand for a day to dry. Then apply a good polish. This is the formula for the one I make and use:

One-half pint of methylated spirits, ½ ounce of dragon's blood (one of the resins), ½ ounce of gum shellac. Stand



this before the fire, shaking it occasionally, until it is fully dissolved. Apply it with a clean piece of old cotton, rubbing briskly. Your table is done.

Spanish Rice—Parboil one cupful of rice by cooking about twenty minutes, then pour the water off, cover with boiling water, and cook for an hour. Drain, dry off, then put in butter until yellow. Add two pimentos chopped fine, season and mix well, and put in baking dish. Grate over a thick layer of cheese and bake for twenty minutes.

L. B., New York.

Rendering Lard—For each gallon of chopped fat take one quart of water and one teaspoonful of baking soda. Do not fill the kettle too full. If you follow this recipe you will have no cracklings, for the fat cooks into a pulp, being dissolved by the soda. When the lard is done, remove the scum which has formed and drop a grain of corn or a small piece of metal into the lard. If you can see either as plainly as if you had dropped them into a pail of clear water, your lard is done; but if it looks clouded, there is water in it and it must be cooked longer. Lard rendered in this way may be kept for two or three years.

A. C. E., Kansas.

Baked Ham—Cut the ham an inch and a half or two inches thick, trim, and place it in an iron skillet. Pour in a little water and around it put potatoes pared and cut in two if too thick. Cover with a tin lid and set the skillet in the oven. Sprinkle the potatoes with a little salt if the ham is not very salty, also pepper. It may be necessary to put in more water. Bake for an hour or more.

J. C., Ohio.

Codfish Chowder—Fry four or five pieces of salt pork, and when done put in a kettle with about two quarts of water. Add six good-sized potatoes, sliced, and two medium-sized onions chopped rather fine. Shred up a large cupful of codfish and add to the chowder. Allow to boil slowly till done. Before serving add a pint of rich milk and a generous piece of butter. Serve with crackers.

J. H. J., Vermont.

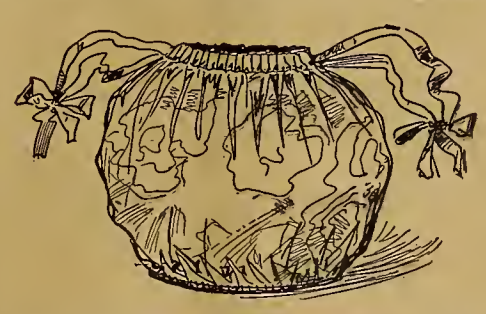
Glue—To have glue always ready to use, dissolve it in vinegar on the back of the stove and pour into a bottle. It stays then in liquid form, and in wintertime needs only a little warming before it is used.

Mrs. H. F. B., Wisconsin.

Banana Salad—Slice well-ripened bananas in half lengthwise, and place on lettuce leaf in small salad plate. Spread over each a heaping tablespoonful of mayonnaise and sprinkle with pecans or English walnuts.

E. D. T., Texas.

A Useful Little Bag—Take a piece of cardboard and, using a cup or small sauce dish as a pattern, mark out two circles. Cut out the circular pieces,



cover each with the goods, then overcast the two together. Take a straight piece of goods as large as you want for the top of the bag, sew the edges together and put in a hem with two rows of stitching about one-half inch apart. Fold a tiny hem around the bottom, gather it, and sew the wrong side to the circular pieces which are to form the bottom of the bag. Make a small buttonhole on each side to run ribbon through, then put in ribbon drawstrings and the bag is done. When made of silk or ribbon these bags are very dainty, and they make a neat and inexpensive gift.

Mrs. F. W., Missouri.

The Taming of Big Jim

[CONTINUED FROM PAGE 12]

between a smile and a certain grim seriousness, "I like you all. But Big Jim was born in Missouri, like me. And just listen," her voice was trembling, "you think he did a big thing when he caught Gotch the other day, but back in Missouri he did a finer thing than that." The glum-looking man started up as if to stop her, then settled back and folded his great brown hands into one another as the child, her eyes big with emotion and admiration, hurried on, "Back there he stopped a runaway horse that was going to kill a *beautiful lady*. That made Big Jim lame, and 'cause he loved the beautiful lady he came away and never saw her again."

She looked at the cake. "I wasn't sure how old he was, so I put on nineteen candles to be sure and have enough." Not a man snickered, but as she started to cut it Big Jim found his tongue.

"No, no," he gulped, "don't cut it."

"Don't cut it?" stammered the child. "Why, that's what it's for. It's to eat."

Big Jim struggled to his feet, lifted up the tiny cake reverently and set it beyond the child's reach.

"No, honey, it's to keep."

For a moment Pansy half frowned, puzzled.

"Oh, I know." She clapped her hands and her face brightened with understanding. "You want to keep it because I gave it to you, just like you kept the picture she gave you.

"And I'm going to tell her, too." The child danced around toward him in teasing delight. "I know who she is. I knew her that first time you showed me the picture. And I'm going to tell her how—how splendid you are!"

With sudden impulse Big Jim gathered the child in his arms.

No More Backache

By Mrs. Grace Utt

ANOTHER little labor saver has been made by a man who delights in thinking out things for the convenience of womankind. It is a stand for the dishpan, which enables me to wash dishes without stooping over.

One pine strip, 6 feet by ⅞ inch by ⅞ inch will make the whole thing. Saw two pieces 18 inches long, three pieces 8 inches long, and two pieces 6 inches long.

The diagram will show how the strips are arranged. The notches in the under side of the long strips are made to fit the edge of the sink (opposite the faucets). This prevents any moving of the stand.

The strips at right angles to the long strips must be measured according to

the depth of your sink. The ones in the diagram were for a sink 6 inches deep.

A Cheerful Kitchen

By Edith C. Salisbury

WHAT do you want most in your kitchen?

I frequently ask this question, and one of the replies is very suggestive:

"I want to see something pleasant from my kitchen window," I am told. "A tree, a bit of green, a bed of pansies."

Don't you feel this way too? Don't you want a bit of beauty to take the hard edge off your work? I do.

So let us have, to begin with, a pleasant glimpse of yard, or a window box.

What else do we want?

Two windows for good ventilation.

Also there should be color, for color gives atmosphere and character. White walls are likely to become very depressing, and are no easier to keep clean than colored ones.

The most suitable colors for kitchen decoration are green and white, Dutch blue and white, brown or, if the room is dark, a soft shade of yellow, which will have the effect of bringing in sunshine.

The walls must be covered with something washable and something non-absorbent. These two essentials are best achieved by paint or oilcloth.

Of course paint can be injured by washing if it is not carefully done. No soap should be used, as the alkali softens the paint and destroys the color. A little kerosene in the water will remove the smoke and grease very well.

Because yellow pine contains much resin in its composition, and consequently will not absorb moisture, it is a most satisfactory wood for doors and window casings in kitchens, bathrooms, and laundries. Being soft, it is likely to splinter, however, in floors that are much used. The most durable wood for any floor is hard maple, but some kind of covering on the kitchen is easier on the feet. There is nothing better for this purpose than cork or inlaid linoleum.

Kitchen Comforts

By Emily Holt

I HAVE been jotting down from time to time the names of useful kitchen utensils which are missing from many good kitchens which I visit.

The double boiler—or cereal cooker as it is often called—is frequently absent. I consider it essential in the proper making of custards, cream soups, steaming cereals, and cooking any dish in which eggs and milk are used. Such an utensil can be improvised by putting one saucepan inside a larger one containing boiling water. But this makeshift should not be resorted to except when it is necessary to practice the strictest economy; for to continue its use, usually indicates a lack of thrift and pride in household furnishings.

The following articles I consider a good investment in the equipment of any kitchen, because to do without any one of them means spending more time over certain tasks than is necessary, and their lack is often one of the causes of failure: Flour sifter, good egg beater, pair of sharp-pointed scissors, good vegetable knife and sharp meat knife, coarse and fine strainers for gravies and soups, one or two standard measuring cups, bread mixer, covered galvanized iron garbage can, long-handled dustpan, good-sized tray, meat chopper.

To these I should add a gasoline or coal-oil stove for use in hot weather; a high stool on which to sit for dishwashing and preparing vegetables.

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A Fashion Talk

About New Clothes and Renovating Old Ones

By GRACE MARGARET GOULD

THIS is the season of the year when every woman is thinking about new clothes. And many a woman is good and discouraged when she hears about how entirely different the styles are from those of last year. She pictures her own last season's wardrobe, and despairs.

Just what is she to do?—that is the question. Well, between ourselves, the new modes launched at the beginning of each new season are far from being as extraordinary and novel as they are rumored.

Nowadays, styles change slowly, and no matter how great a reputation a woman has for being well dressed she is very much averse to rushing from one extreme to another. This particular autumn the fashions are really most satisfactory. The new clothes are decidedly wearable ones and fit in with the average woman's environment.

Generally speaking, startling effects are missing. The fabrics, and the colors too, are conservative.

Style Features to Follow

In planning your new clothes for the autumn and winter there are certain style points to bear in mind. For instance, the new skirts flare, and in width they measure from two to four yards at the bottom. This width is governed entirely by the type of dress. The very short skirt is no longer the height of fashion. Three inches from the ground is about the average length. The preferred waistline is normal.

Waists and coats have a suggestion of a fitted effect. The very loose blouse is no longer the height of style. Sleeves are long and set into a moderately large armhole. Collars are high, though a number have the height entirely at the back and have a slight V opening in the front.

The new corsets give the figure a trim effect it has not had for some years. The bust is slightly higher than it has been, and at the sides the corset shows the natural curve of the figure. The skirt portion is shorter, and there are more bones in the new models than in the old. There is a decided suggestion of a waistline.

You can readily see how this new, trimmer silhouette has brought into fashion again the princesse type of dress. At all the fall openings the princesse gown was in the lead. The majority of these one-piece dresses are made with a panel front and back and a belt suggestion over the hips.

Such materials as poplin, whipcord, serge, and gabardine are used for these costumes, with long sleeves of either taffeta silk, satin, Georgette crêpe, or voile. Generally speaking, buttons and braid are the trimmings. Bone buttons in dark blue or black sewed to the dress with a pretty shade of bright silk give a new, smart trimming touch. It is quite as fashionable to have the braid on these dresses the same color as the fabric as to use black braid. Either is good style.

Among the best-looking of the princesse dresses are those in dark colors, such as crow's-wing blue, tête de negre, which is a very dark brown, or blackberry, which is just the shade of blackberry juice. These dresses are relieved with a touch of gay velvet for the collar and cuffs. Cherry is an effective color to use as a contrast, also emerald-green, orange, sulphur, thread color, geranium, and the many different shades of the lighter blues.

Both suits and dresses this season are seen in Russian blouse style, the skirts often showing groups of plaits.

In the new tailored suits the jackets vary in length from 28 to 32 inches. These coats are made along conservative lines, though many have the skirt portion flaring. Revers are missing and shawl collars are no longer considered in style. The collar which fastens up close to the neck is the collar of the moment. Among the most practical coats—whether a suit coat or a long separate garment—are those having collars which can be worn either high or low. And speaking of collars, let me tell you that many of the imported coats show the most extraordinary high collars; so high, in fact, that they entirely cover the chin. These choker collars are generally made of fur, plush, or velvet.

The Redingote in Fashion

The redingote is also back in fashion. I am sure you must all remember it. This autumn it is seen not only in the form of a separate coat, but plays an important part in the new coat dresses, which are also called redingote dresses. It seems to me that if I were planning just one new dress this autumn I would select for my model a coat dress. And now let me tell you why.

The redingote dress can be worn in the street during the cool autumn days, taking the place of the tailored coat suit; yet, if it is made of certain materials, it will look all right in the house. This year the combination costume is much the fashion, and a very smart redingote dress could be made of two materials, such as crêpe de chine and serge. For instance, I would have the skirt of the serge and the redingote, which is really the waist and tunic in one, made of the crêpe de chine trimmed with bands of the serge. Now, to add to the usefulness of this type of costume, my idea would be to get a separate waist, say of dark blue crêpe de chine, matching exactly the redingote. It could be trimmed with a bright touch of velvet, if one wished, or with merely collar and cuffs of cream embroidered batiste. Sometimes the serge skirt could be worn with the separate waist, and then again, the entire effect could be changed by wearing the skirt with the redingote.

Another idea which would help out a skimpy wardrobe is to have a tailored coat made to wear with the serge skirt. In this way a woman would have a tailored suit which she could wear with wash shirtwaists for everyday and for more dressy occasions with her crêpe de chine waist, while at other times she could wear the same skirt with her redingote.

Satin, especially black satin, and a dark-toned serge, will be much used for the redingote dresses. Poplin and taffeta, as well as broadcloth and moire, will also be combined.

The New Separate Coats

Of course, if the one new dress that you are thinking of getting at this particular time happens to be a princesse, the separate coat becomes a necessity. The new separate coats this year are very serviceable as well as stylish. The skirt portion flares, the cuffs and collar are big, and the coats have a suggestion of being form-fitting.

There are other models, also good-looking, along the Russian line. These have extremely wide belts. If you happen to have a last winter's separate coat it can be easily given a new touch or two and do very well for this year. Changing the collar will do much for it, especially if you use a very high fur collar. Fur cuffs and a wide fur belt will also add to the new effect.

The woman who feels she cannot afford a new set of furs this winter can get along very nicely by having her tailored suit or her separate coat trimmed with fur. Fur is also to be much used as a trimming on costumes. Many of the new skirts are finished with a broad band of fur. Such furs as Hudson seal, beaver, raccoon, skunk, and fox are the most popular.

The fox fur sets showing the animal head and brush on both the neckpiece and the muff are particularly fashionable this year. Old-fashioned round muffs—the plain ones—are also good styles, and a very smart neckpiece buttons up close to the throat, fastening with one big button. There are two tabs—one slashed and the other a broad one.

This type of neckpiece in beaver or Hudson seal is very smart.

Filmy Materials for Evening Wear

The evening dresses are decidedly a flare. They show much fulness. Such materials as tulle, net, marquisette, chiffon cloth, and voile are all used as drapery over satin or soft taffeta foundations. The triple flounce skirt is much the vogue, each flounce stiffened with a satin-covered cord. The waists are very simple, many of them consisting of just a drapery of tulle, often in surplice fashion. The neck may be filled in with lace, and long transparent tulle sleeves may be worn, or very short sleeves consisting of two or three outstanding tulle frills.

The hats are quite plain, but never have they been smarter in style, and the best part of all about the winter millinery is that every woman can now have a truly becoming hat, as the shapes are so extremely varied. Hatters' plush and satin are often used in combination, as well as velvet and taffeta. Pressed felts are favored too, and very many velvet hats will be worn.

The sailor shapes are good style for practical wear, and turbans and toques are considered extremely smart.

The majority of the hats have little trimming. However, the woman who owns an ostrich plume is most fortunate this season, as ostrich is considered high style.

Bead ornaments and old-fashioned crewel embroideries are much used on the new hats. They are introduced as an applique trimming.

A WINDOW washer in New York the other day fell three stories and alighted on a little girl and the baby in a carriage in her charge. The cab was crushed. The baby was only scared. The man was unhurt. The little girl was slightly injured. The severest injury was to the little girl's mother, who fainted when erroneously informed that her daughter was killed.

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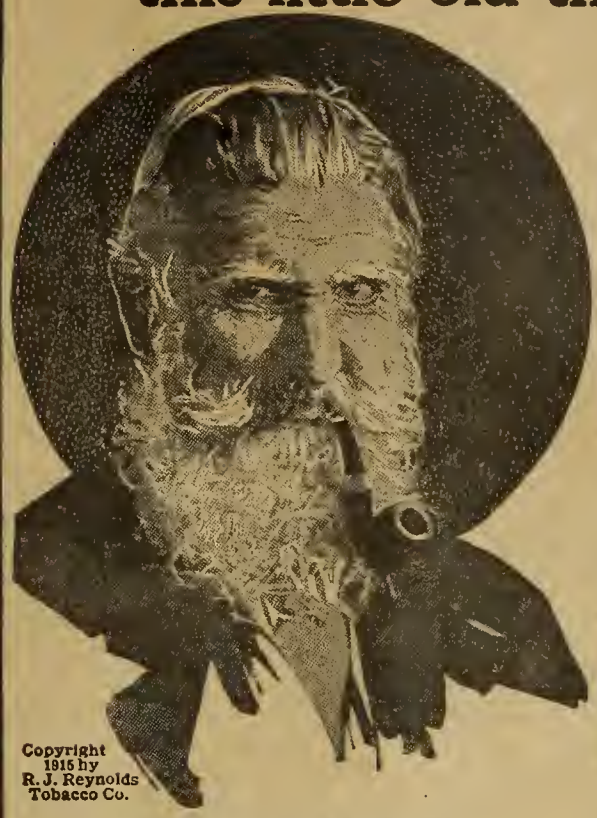

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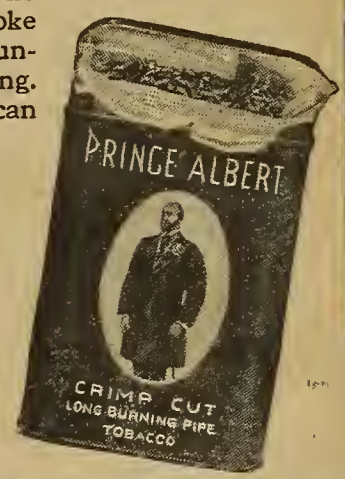

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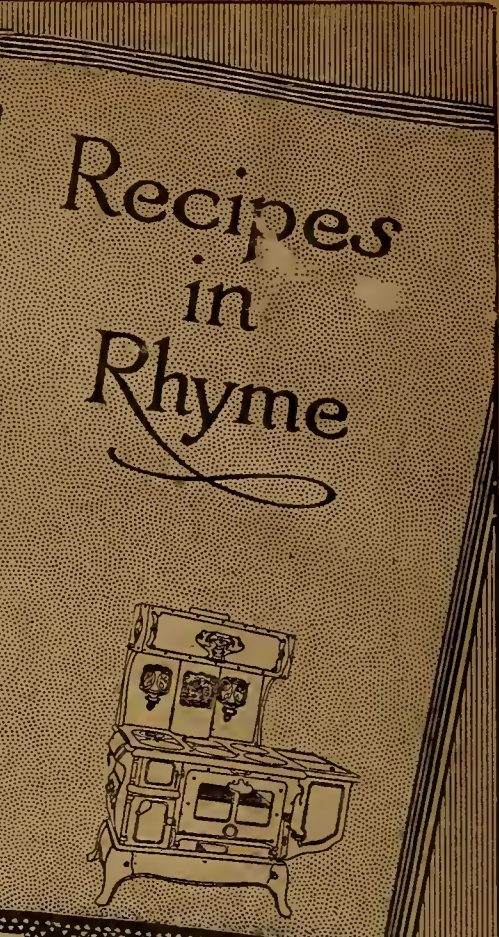

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